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THE BOOKISH THEORIC

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Those of us who have practiced the healing art for the last quarter of a century have observed many fads and fancies which have been hailed with glad acclaim by the great and the near great and then have disappeared like the snow on the desert's dusty face. Many of us recall how mercurochrome given intravenously was to cure pyemia; how "lipo-vaccine" was to replace the old typhoid vaccine; how the chick embryo was to replace the calf in producing smallpox vaccine; how polioencephalitis was to be prevented by virus; how meningitis was to be cured by the intrathecal injection of urotropin; how gonorrhea was to be cured by acriflavine; how the infant with winter diarrhea was to be saved only by mastoidectomy; how one injection of salvarsan was to cure syphilis (and the fee for injecting it was in indirect ratio to the length of treatment); how syntropan was to cure arthritis instead of causing acute yellow atrophy of the liver; how "twilight sleep" resulted in the birth of blue babies who sometimes never saw daylight; how certain obstetricians were Pottering around trying to force all infants to make their entrance into this world—as adults make their exit from it—foot first; and how the Freudians proclaimed to the world that repressed desires were responsible for all undesirable acts. (Some of this blame has since been placed on the dysfunction of the endocrines, but none of it has been placed where it belongs—on lack of parental discipline.)

Recently, an experienced druggist stated that doctors no longer prescribe but that detail men prescribe for them. This is only too true. If you doubt it, examine the files in a store after that ubiquitous thief of time, the detail man, has instructed the physicians what and how to prescribe. The sale of vitamins is now big business, and the physician has done his part in bringing this situation about. Vitamins, when needed, are usually prompt and spectacular in their action. If they were prescribed *only when needed*, millions of dollars with which to purchase milk, eggs and vegetables would be saved yearly. The same is true of the elegant and expensive forms of iron and liver. If a patient has an extremely low hemoglobin, he needs a blood transfusion. If not, one of the older forms of iron will be just as efficacious as that advocated by the detail man—and at half the cost. Minot has demonstrated that liver is almost specific in pernicious anemia; however, this type seldom occurs in children. It is worth recalling that for an infant a hemoglobin of 60 per cent or less may be within normal limits. Iron is frequently prescribed for infants to cure an anemia which never existed except in the brain of the physician.

Most physicians who advocate new drugs or new methods believe that they are making a real contribution to the healing art, but experience teaches that most of these contributions are duds. Some of these fads are harmless but many of them cause more deaths than do the diseases which they are supposed to cure. "Be not the first by whom the new is tried nor yet the last to lay the old aside" is sound advice. It should be recalled when a new prophylactic measure is

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offered to replace one which has been proven satisfactory. When chick embryo smallpox virus was heralded as superior to that made from the calf, many were eager to try it despite the fact that the other method had served well since 1800. Will the physicians who experimented with their little patients be frank enough to state that the protection, if any, is very uncertain? I see no good reason for using the multiple puncture and other methods of vaccination instead of the old reliable scratch method. There are worse things than Rosenau's "sanitary dimple".

Sometimes, even though a new method is of proven value, its use is not warranted unless some older and *less dangerous* remedy has been tried and found wanting. For instance, fever therapy is of undoubted value in chorea. However, it sometimes causes the cardiac movements as well as the choreic to cease. Large doses of antipyrine will seldom fail to check chorea within ten days. The patient needs no hospitalization, and I have seen no ill effect from the use of this drug. In several instances I have seen the modern treatment of aphthous stomatitis fail completely, and then witnessed prompt relief when chlorate of potash was administered internally. When the modern coagulants fail to stop an oozing of blood, try Monsel's solution. This is so obsolete that it has been omitted from the recent edition of the U. S. P., but it is still of service to some of the horse and buggy doctors. The most useful drugs may yet be very harmful when used without indication or discrimination. The introduction of the sulfonamide drugs marked an epoch in therapy; yet the efficacy of these drugs does not justify their indiscriminate and unintelligent use. Nowadays, it seems that there are only two classes of patients: those who are benefited by the sulfonamides, and those who need a doctor who can make a diagnosis.

Recently the barbiturates have been widely used in the convulsive states, and they are excellent for this purpose; however, if you wish really quick action, nothing equals the inhalation of chloroform. While employing the newer methods one should remember the fundamentals of rest, fresh air and elimination. Oxygen therapy is indubitably of service in many conditions, but I have seen a young child under an oxygen tent exhausting himself because of fright and have seen this same child quiet down and become less cyanotic when the tent was removed and the windows opened so that he might benefit from God's fresh air.

The matter of studying bedside charts has become a fetish, just as close observation is becoming a lost art. If the baby is taking his food well and the vital organs are functioning properly, why worry about the temperature curve? I have seen many patients die with a normal temperature and some recover after having a temperature of 107 F. Fever therapy has proved its usefulness. At last we are beginning to see the truth of the Hippocratic dictum, "Fever is remedial in purpose and effect." Many physicians, however, still seem to think that it is more important to treat the fever than to treat the patient.

Now, to introduce a discussion of one of the most harmful fads which has come to plague us, permit me to quote that master of wit, that astute interpreter of human traits and sympathizer with the underprivileged, Charles Dickens: "The fact is, that there was considerable difficulty in inducing Oliver to take upon himself the office of respiration—a troublesome practice, but one which custom has rendered necessary to our easy existence; and for some time he lay gasping on a little flock mattress, rather unequally poised between this world and the next; the balance being decidedly in favour of the latter. Now, if, during this brief period, Oliver had been surrounded by careful grandmothers, anxious aunts, experienced nurses, and doctors of profound wisdom, he would most inevitably and indubitably have been killed in no time. There being nobody by, however, but a pauper old woman, who was rendered rather misty by an unwonted allowance of beer; and a parish surgeon who did such matters by contract; Oliver and Nature fought out the point between them. The result was that, after a few struggles, Oliver breathed, sneezed, and proceeded to advertise to the inmates of the workhouse the fact of a new burden having been imposed upon the parish . . . " This is by way of reminding you that babies do best when interfered with the least. Since the time of Adam and Eve, for aught we know to the contrary, babies have done remarkably well without prelacteal feeding. If it were best for the baby to have milk at birth, rest assured that Nature would have supplied it. The initial weight loss is normal, not path-

ological, and therefore it is helpful and not harmful as the meddlesome Matties would have us believe. Babies fed shortly after birth are more apt to have digestive disturbances. Worse still, they do not nurse vigorously when put to the breast, and, because of lack of stimulation, lactation may never be well established. The modern mother of the card table-cocktail strata of society needs neither encouragement nor excuse to escape the duties of motherhood. In fact, she seems to think that her breasts are for the sole purpose of making a sweater intriguing. Isn't the unfortunate infant sufficiently handicapped by having his defenseless head pulled through the birth canal by steel blades? Must he be drenched with milk and orange juice as soon as the cord is cut? Weight loss is common to young mammals. This proves that it is natural, and, therefore, best. Nature may, at this time, need our assistance, but the time is not yet when we can improve on a physiological process. "Perfect I call thy plan."

By the use of laboratory methods we are now able to diagnose diseases which, without this mechanical help, would always have been beyond our grasp. But such help has not been without its penalty. Too often the laboratory is permitted to be our master instead of our servant. We are forgetting to use our special senses. We are losing the art of deduction and logical thinking. We are depending too much upon the blood count, the radiogram, the basal metabolic rate; and too little upon observation, auscultation, percussion and palpation. Rarely can we make a diagnosis upon a blood count alone, and when the count is normal it disproves nothing. When an x-ray of the chest is in conflict with the physical findings, he is well advised who adheres to the latter. When a physician examines an x-ray film of the chest (or reads its interpretation by the roentgenologist) before using auscultation and palpation, he is prone to interpret his findings in terms of what he has seen. His visualization of the picture makes him deaf to the auscultation and percussion notes. At best, when interpreting a radiogram, we are groping about in shadow-land. The picture is accurate but the interpretation may be faulty. X-ray diagnoses of pulmonary abscess and pleural effusion are frequently made but these conditions are seldom present unless they can be detected by auscultation or percussion. A flat note and a change in breath sounds are unmistakable findings, and they have their significance, always. Gladly we pay tribute to Roentgen, but we must never forget Laennec and Austin Flint. It is well to recall that all is not tuberculosis that calcifies.

One should never be so naive as to think that because a blood count is normal a patient can not have this, that or the other disease. On several occasions I have seen patients with pneumonia who had a normal blood count and normal pulse-respiration ratio. Despite all of the information concerning the Wassermann test, some still think that a positive test means syphilis and a negative test, the absence of it. Among the rare diseases giving a positive Wassermann reaction, I have observed rat bite fever and tuberculous meningitis. Concerning the laboratory tests for kidney function: while the nonprotein nitrogen, the concentration test, and the phenolphthalein test may help in prognosis, the fluid output compared to the fluid intake is what should interest us most. Similarly, in cardiology, the electrocardiogram may call forth dire forebodings; yet the only worthwhile test of cardiac function is the amount of work which the heart can perform—even while loudly murmuring at the task—without signs of decompensation. Our dependence is in this rather than in what the wild waves are saying.

Except during the past two decades, when chemotherapy, biochemistry and serology have added so much to the diagnosis and treatment of disease, most of the progress in medicine has been accomplished solely by the use of the special senses and without the use of any of the diagnostic impedimenta which we now depend upon to do our thinking. It was observation and logical deduction by such immortals as Hippocrates, Galen, Celsus, Harvey, Jenner and Sydenham which laid the foundation of modern medicine. It was this which enabled them to differentiate diseases, to relieve pain with opium, gout with Colchicum, rheumatism with wintergreen, malaria with Cinchona, syphilis with mercury and the iodides; to prevent smallpox by vaccination and scurvy by the use of citrus fruits, a century and a half before Funk coined the word, "vitamin". So, before we desert the altars of forgotten gods, it behooves us to make certain that the new

idols which we are eager to worship have not feet of clay.

In conclusion, permit me to misquote Rudyard Kipling thus:

If you can hear of fads, without believing,
And to thine own self be true, without deceiving;
If you can reserve judgment until the thing is *proved,*
And study conflicting laboratory data without *being moved;*
If you can think of P wave and B. M. R. as *lightly as your B.V.D.'s*
Yours is the diagnostic world and everything *that's in it,*
And—which is more—you'll be worthy of your *heritage, my son!*

And now, whatever your verdict on this rambling dissertation, we may, with all modesty, submit that it does not smell of buckram, that it is our brain child; and we can say with prideful proprietorship, as Touchstone did of Audrey, "an ill-favored thing, sir—but mine own."

CHEMICAL WARFARE IN CIVILIAN DEFENSE

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The widespread use of chemical agents in the present war is a possibility which must be faced. No one knows what our enemies have in store for us, and we must be prepared for any eventuality; for the airplane has placed the civilian as much in the front line as is the soldier at the actual fighting front. The threat of the use of gas against civilians will remain as a terror weapon. It is possible that selected civilian targets, such as shipyards, aircraft factories, power plants, telephone exchanges, railroad stations and other key areas, whose failure to operate would paralyze our rapidly moving and highly integrated civilization, may be sprayed with liquid chemical agents from airplanes in an attempt to spread panic and to break down essential services.

Types of Chemical Agents[1]

Chemical warfare should not be considered solely the use of gas. There have been large numbers of casualties from the use of incendiary missiles in Great Britain. These may be in the form of large bombs filled with oil or gasoline, two-pound thermite-magnesium bombs, or the ingenious "calling cards" containing phosphorus, used by the British in an attempt to burn forests and crops.

The chemical agents used to inflict human casualties directly are of the same type as those used in the last war, and are composed of two chief groups: the pulmonary irritants and the vesicants. Phosgene is a member of the former group, affecting primarily the lungs; it is a true gas at ordinary temperatures and is quickly dissipated. It can be identified by the characteristic odor of green corn silk or ensilage. Mustard, the chemical agent which was most widely used in the last war, is primarily a blistering agent. At ordinary temperatures it is a heavy liquid resembling dirty crankcase oil, and it vaporizes slowly to form a heavy gas which hugs the ground and which may persist for days. It can be identified by the characteristic odor of garlic, dried mustard or horseradish. It affects chiefly the skin and eyes, with the formation, after a latent period of some hours, of a superficial dermatitis analagous to poison ivy dermatitis. The lesion formed is a large blister containing clear, harmless fluid, which is surrounded by moderate erythema, and accompanied by severe pruritis. If the lungs are unprotected by a gas mask, they may be affected. Lewisite is primarily a vesicant but contains in its molecule a systemic poison—arsenic—which may cause delayed death after absorption. Lewisite burns are analagous to hydrochloric acid burns; the material continues to eat through the superficial and subcutaneous tissues until it is neutralized. The blister fluid is cloudy and extremely irritating; it contains arsenic, and if spilled on the undamaged skin will cause "daughter" blisters. This agent, invented by an American, can be identified by its characteristic odor of geraniums. The ideal agent would be an odorless compound which would blister and, by hydrolysis, liberate a rapidly acting systemic poison. It is known that before Hitler's rise to power, prominent German chemists who were active in the preparation of chemical agents during the last war did considerable research on the cyanide compounds, and it is quite possible that these will be used before the present conflict is over. Any new agents will, in all probability, follow one of the types outlined above, and the protective measures now employed will be adequate.

From the Department of Preventive Medicine, The Bowman Gray School of Medicine of Wake Forest College, Winston-Salem.

Presented before the Eighth District Medical Society, Asheboro, October 7, 1942.

1. Jacobs, M. B.: The War Gases: Their Identification and Decontamination, New York, Interscience Publishers, Inc., 1942.

Pathology

The pathologic processes involved in the action of these chemical agents resemble those seen in many peacetime casualties. Following the inhalation of phosgene (which rapidly hydrolizes to hydrochloric acid), the lung becomes wet, the alveoli are filled with tremendous exudation of blood serum, the capillary walls are damaged, and many capillaries are thrombosed. Obstruction to the flow of blood through the lung and to the passage of oxygen across the membranes into the blood is produced, and results in peripheral venous distention and cyanosis. As the process continues the peripheral circulation fails and the picture is one of peripheral circulatory collapse or shock. The greatest number of deaths occur within twenty-four hours. Late sequelae are bronchiectasis, gangrene, lung abscess and pulmonary fibrosis; tuberculosis, however, occurs no more frequently than in the general population. Parenchymatous degenerative changes in the brain, kidney and heart have been reported, but are not a prominent feature.

In burns due to incendiary or to vesicant agents, the pathology is the same as that in a burn due to any cause. The chief disturbances are due to the tremendous loss of protein and fluid through the weeping lesion, and to the secondary infection which almost invariably follows. Late sequelae of the skin lesions are scars and contractures.

Of all the casualties from chemical agents in the last war, only 2 per cent died; this was far less than the mortality among casualties from rifle or shell fire (24 per cent).

Treatment

A person suspected of having inhaled a pulmonary irritant should not be allowed to take the slightest exercise, and should be classed immediately as a stretcher case. No artificial respiration should be given because of the danger of rupturing alveoli and causing emphysema. Atropine and many other drugs have proven ineffective in reducing the pulmonary edema; aminophylline was not available during the last war, but would be a logical drug to try. If venous distention is marked, venesection may give temporary relief. The blood should be collected sterilely, as it may have to be reinjected when the stage of peripheral circulatory collapse is reached. Oxygen should be administered by whatever method is available.

The vesicant agents are fat-soluble oils at ordinary temperatures, which tend to dissolve in the secretions of the skin. Clothing should be removed and put in a metal container with a tight fitting lid so that the first-aid personnel is not exposed to the vapor. Droplets of the material should be daubed off with a dry cloth or one dampened by a fat-solvent such as lead-free gasoline, alcohol, ether, or kerosene. Then the skin may be decontaminated with any chlorine-containing compound such as bleaching powder, Zonite or Chlorox; in the case of Lewisite 10 per cent hydrogen peroxide is preferable, though the common 1-3 per cent household solutions will be effective. A thorough scrubbing with large quantities of laundry soap or other soap and water has proven, in experimental animals, as effective as any other measure, and should be done whether or not other decontaminating agents are used. Speed is extremely important, especially in the case of Lewisite, and one should use whatever is handy rather than waste time searching for the ideal material.

The eyes should be irrigated with a quart of tap water or normal saline under very low pressure as a first-aid measure, and then protected against light. Butyn or holocain may be used if pain is severe, but no cocaine. If the eye is damaged, the pupil should be dilated with atropine or homatropine.

The treatment of burns should be directed toward the replacement of protein and fluid loss and the prevention and control of infection[2]. Treatment of circulatory collapse should be instituted before local measures are employed. If as much as 10 per cent of the body surface is burned, plasma should be started immediately, even though no signs of shock are present. The quantity used should be controlled by hematocrit readings; as much as 5500 cc. may be required in twenty-four hours for a single patient. Local treatment should be done as aseptically as possible. The area should be cleaned with soap and water, and if there is evidence of exposure to a vesicant agent, should be decontaminated. Debridement should be done in the operating room under sterile technique, and the area should then be sprayed

2. Harkins, H. N.: Treatment of Burns, Springfield, Ill., C. C. Thomas, 1942.

with triple dye (composed of 1 per cent aqueous gentian violet, 1 per cent brilliant green and 0.1 per cent acriflavine), with a mixture of 5 per cent tannic acid and 5 per cent silver nitrate, or with the newer solution of 2.5 per cent sulfadiazine in 5 per cent triethanolamine. These form an eschar which diminishes fluid loss and prevents further contamination from the air. Sulfadiazine, silver nitrate, and the triple dye are bacteriostatic, but infection may spread under the eschar, particularly if devitalized tissue is present. In the present war experience has taught that the commonest errors have been in dressing burns too frequently, and in not observing meticulously the principles of sterile technique in changing dressings.

The experiences during the Spanish civil war and the mass raids on the British civilian population indicate that the most serious problem is injury due to mixtures of high explosives and incendiaries. The number of civilian casualties is small in comparison to property damage, but those who are injured are injured severely, and in spite of all therapy nearly 40 per cent die.

Since the threat or suspicion of gas is likely to cause people to swamp medical facilities, one should be extremely ruthless in weeding out at the first-aid post all those not known definitely to have been injured or exposed to gas. Forty per cent of those injured by falling masonry, crushed by beams, or severely burned in fires will die in spite of the best treatment, whereas only 2 per cent of those injured by gas will die. We must devote our energies to those who need our services most. In the light of the British experience we should not attempt to care for more than 50 severely injured casualties in any single hospital. We have arranged for adequate supplies of plasma in banks scattered throughout an area within two hundred miles of the seacoast. If a raid comes the local supplies of plasma will be exhausted within a few hours, and probably the greater part of that stored within overnight travel of the raided city will be required in the first few days.

It is most important, if our existing setups are to function efficiently, that the general population should be adequately instructed in simple measures it can follow if gas is used. Except for air-raid wardens, gas officers or decontamination squads, civilians do not need to enter gassed areas until nature has rendered them safe by sun, wind, and rain. In all probability individuals must decontaminate themselves at home simply with soap and water. There is little to be done outside a hospital for those who have inhaled gas. Above all, civilians should realize that chemical warfare holds no mysterious power of sudden death that can wipe out entire communities, but that these agents can be safely and effectively combatted by intelligent, trained persons.

TETANUS AND THE ESSENTIALS OF ITS SUCCESSFUL TREATMENT

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Tetanus is almost entirely a preventable disease, and remarkable progress has been effected in its control. Unfortunately, however, prophylactic measures too often are not used, and when the disease does develop, it is usually not cured. I believe tetanus to be curable in almost all cases in which the proper treatment is instituted early enough.

Prophylaxis is simple and inexpensive. It appears probable that the essential difficulty in prophylaxis in North Carolina lies in the lack of interest among the public. North Carolina physicians use prophylactic antitetanic serum with exceptional discretion and skill—as is evidenced by the very low mortality rate in this state from tetanus[1].

Tetanus bacilli and spores have their origin in the intestinal tract of horses, mules, sheep and possibly all herbivorous animals. They are found at times in the human feces. For some unknown reason, mice are partially immune and fowls are almost completely immune. Infection is produced by the introduction of the bacilli into wounds, usually puncture wounds, but at times contusions or lacerations; rarely, they enter by cuts. Infections are mixed. It is doubtful if a pure culture of tetanus bacilli would cause much damage. Spores are destroyed by phagocytic action in a clean wound. Very interesting experiments have been performed by introducing pure cultures of tetanus bacilli or detoxified bacilli into stab wounds. Such experiments very rarely yield symptoms of tetanus. This suggests the possibility of a sym-

From the Medical Department of Rex Hospital, Raleigh. Presented before the Rex Hospital Staff, June 8, 1942.

1. North Carolina Public Health Reports, 1914-1941.

biosis in addition to the anaerobic characteristics of the infection.

The infection of tetanus usually remains at the site of the wound, and the two toxins are spread from the focus. The toxins are absorbed by motor nerve end plates and are conveyed along the axis cylinders and nerve lymph channels to the spinal cord. The major portion of toxins are absorbed into the blood stream and carried to motor nerve end plates over the entire body[2]. This accounts for the generalized involvement of the muscular system of the body.

The nerves to the jaw and neck are among the shortest motor nerves in the body, and toxins can reach the central nervous system from the blood stream by these nerves much more quickly than through longer nerves. This accounts for the fact that the initial symptoms of this disease are stiffness and soreness in the muscles of the jaw, neck and upper back.

Symptoms of this disease are due to an extreme degree of hypertonicity of the motor apparatus. This sensitive reflex arc reacts so readily that clonic and tonic spasms may result from any stimulus.

Autopsy findings show tetanus bacilli in the wound, degeneration of ganglion cells in the cord, and some congestion of the gray matter of the pons and medulla.

Historical Note

It is interesting to compare statistics and opinions regarding tetanus before and after the discovery of the cause of the disease in 1884. Dr. Roberts Bartholow[3] stated that "by tetanus is meant a disease characterized by paroxysmal tonic contractions of the voluntary muscles, and due to an exaltation of the reflex function of the spinal cord." He listed as causes: wounds, pricks of the skin, nerve injuries, and intrinsic or extrinsic lesions, and also cold water dressings and pressure of scar formation on nerves. He stated that recovery is to be expected in the chronic forms but that acute forms are rapidly fatal. Present day treatment differs from his treatment only in the use of antitetanic serum: he recommended the removal of foreign bodies, the dissection of new scar tissue in wounds (how similar to our prsent day methods!) and also section of involved nerves. Bromides in very large doses, curare, opiates, ice bags, nourishment and quiet complete the treatment. The same writer, in his MATERIA MEDICA AND THERAPEUTICS[4], questioned the value of strychnine in tetanus, although many observers were lauding its use at the time! He quoted H. C. Wood's report of 15 cases he had collected in which potassium bromide was the chief or the only agent used, and of these only 2 died.

Samuel D. Gross in 1872 collected reports of 415 cases of tetanus, with 233 recoveries and 182 deaths[5]. This is a fatality rate of only 44 per cent.

Our results at present with antitetanic serum are not that good. At that time, with their remedial measures, and without antitetanic serum, fatality rates appear to have been from 40 to 60 per cent. Henry A. Davidson, in the CYCLOPEDIA OF MEDICINE[6], places the current fatality rate for the United States at 80 per cent. Some other writers place the fatality rate as low as 60 per cent.

Tetanus is so widespread in its natural distribution that eradication of the disease does not appear feasible. Prophylaxis is the best method we have for tetanus control. Tetanus does occur after the use of prophylactic doses of antitetanic serum, but if the serum is given within twenty-four hours after an injury, protection is usually complete; if tetanus does develop, it will be mild, and probably localized rather than the usual generalized type.

Mortality and Fatality Rates[7]

The mortality rate from tetanus has decreased in the United States from an average of 3.5 deaths per 100,000 population for the years 1901-1905 to the all time low of 0.5 in 1939. The average for the ten year period 1930-1939 is .84 per 100,000 population[8]. In the Southern states there is a high mortality rate from tetanus. This has been ascribed to the large Negro population and the agricultural conditions. North Carolina, although surrounded by states with high mortality

2. Boyd, William: (a) Textbook of Pathology, ed. 3, Philadelphia, Lea and Febiger, 1938, p. 220.
(b) Surgical Pathology, ed. 4, Philadelphia, W. B. Saunders Co., 1938, p. 82.
3. Bartholow, Roberts: Practice of Medicine, New York, D. Appleton & Co., 1884, pp. 668-672.
4. Bartholow, Roberts: Materia Medica and Therapeutics, New York, D. Appleton & Co., 1884.
5. Gross, Samuel D.: A System of Surgery, Philadelphia, Henry C. Lea, 1872, Vol. 1, p. 643.
6. Davidson, Henry A.: Tetanus, in The Cyclopedia of Medicine, New York, F. A. Davis & Co., 1936, Vol. 12, pp. 30-34
7. We have used the term fatality rate to apply to the percentage of deaths in cases of tetanus; mortality rate applies to the number of deaths per 100,000 population.
8. United States Census Bureau Reports, 1909-1939 (latest available figures).

rates, has a rate far below that of any other Southern state and well below the national average. The mortality rate in North Carolina has dropped from 3.82 in 1914, when the national rate was 2.1, to the low of .03 per 100,000 population in 1940. The average for the ten year period 1932-1941 is .29, and for the past three years, it is less than .05 per 100,000 population[1]. The chief reason for this very low mortality rate in North Carolina appears to be the extensive use of antitetanic serum. While the vital statistics records show a lowered mortality rate, there is actually a higher fatality rate[7] in the cases of tetanus. The apparent statistical improvement is due to the lowered incidence of the disease resulting from the prophylactic use of antitetanic serum.

Many cases of tetanus develop in individuals who have not consulted a physician about the wound which gave entrance to the bacilli. The case to be reported here is one in which no medical aid was sought until symptoms were well advanced. On the other hand, many physicians might not have administered prophylactic serum had they been consulted by this patient.

Cases of Tetanus at Rex Hospital

At Rex Hospital, over a period of more than thirteen years, there have been 10 cases of tetanus, with a fatality rate of 20 per cent. The two deaths were typical cases: one followed an abortion in a woman aged 29 years; the other patient mashed his thumb on his truck, had an incubation period of twelve days, and was admitted to Rex Hospital two days after the onset of symptoms with tonic muscular spasms and opisthotonos. In spite of large doses of antitetanic serum he died two days later. Two cases were in boys aged 9 and 10 years. They had localized tetanus and recovered quickly with moderate doses of serum. Two adults, a man and a woman, aged 54 and 56 years, had mild symptoms and recovered in a few days on small doses of serum. Both had stiffness in the jaws, neck and upper back; one received 6,000 units and the other 20,000 units of serum. The other 3 patients, all males and aged 11, 16 and 27 years, gave histories of incubation periods of eleven, twenty-two and seven days respectively; treatment was instituted on the first, third and second days of symptoms. All had typical severe cases and all recovered with large doses of serum. White cell counts on admission ranged from 14,450 to 17,500. All patients ran some fever and received conventional treatment.

Report of Case

The tenth patient was a white woman, aged 47, married, but with no children. On May 16, 1942, one week before admission, she ran a stick into the calf of her left leg while she was in her barn lot. She pulled out a piece of wood and painted the wound with iodine. Four days later, she removed another splinter from the wound and noticed that there was some infection. The next day, she had generalized aches and some stiffness of her neck, but blamed it on neuritis. The next day, her jaw and neck were painful and she could walk only with discomfort; she was generally stiff and held her head with both hands to lessen the pain. She consulted her family physician, who diagnosed the case correctly, applied silver nitrate to the wound, and gave her 20,000 units of antitetanic serum in the gluteal muscle. The following day she began having convulsions and was rigid and semi-comatose. Later in the day —May 23, 1942—she reached Rex Hospital in convulsions and with opisthotonos.

On admission her temperature was 103.6 F., pulse 120, respirations 30, and the white blood cell count 15,600. The wound in the calf of her left leg was probed and a two inch incision made rather deeply in the leg into a cavity the size of an egg. The cavity was filled with necrotic tissue. This was wiped out with gauze and washed well with hydrogen peroxide. A square of gauze was left in the incision and was kept wet with peroxide for ten days. Twenty thousand units of serum was injected into the tissues about the wound. Thirty-five thousand units was given intravenously and 20,000 was given in the gluteal muscle. Spinal puncture was performed and a small amount of bloody spinal fluid removed. The blood was assumed to be due to trauma occasioned by the difficulty of making a spinal puncture in a patient with opisthotonos. We gave her 5,000 units of antitetanic serum intraspinally. The small dose was used because of the small amount of fluid that could be removed and also in order to test for untoward reactions. In the evening another 20,000 units was given intravenously.

No change was evident in her condition the next day. She was still rigid and frequently presented clonic spasms. She was given 20,000 units intraspinally and 20,000

units intramuscularly. Her spinal fluid was clear. The third day, there was a slight improvement in her condition. Convulsions were less frequent and it was possible to remove her dentures. A nasal tube was introduced for feeding; she had been unable to take very much nourishment by mouth and occasionally strangled while attempting to drink. We gave her 20,000 units of serum intraspinally, 20,000 units intramuscularly and 20,000 units intravenously in 1000 cc. of 5 per cent glucose in normal saline. On the fourth hospital day, her general condition showed a little more improvement; there was partial relaxation of her muscles when she was asleep, although she was still quite rigid when awake, and her reflexes were hyperactive. The same amount of serum was given as on the previous day. The fifth day she was less irrational and was more relaxed. Serum was continued as before. On the sixth day her improvement was increasing; the spinal fluid was under slightly increased pressure, was turbid and contained 66 degenerating cells per cubic millimeter. She was given 20,000 units of serum intraspinally and 20,000 units intravenously in glucose. The next day she was more rational, and was given 20,000 units of serum intraspinally and 20,000 units intravenously in glucose. In the afternoon she developed a profuse, cold, clammy sweat, and was given 500 cc. of blood plasma to restore her blood globulins. This relieved her clammy sweats. On the eighth day she showed much mental improvement; she was more rational and not so rigid. She was given 20,000 units of serum intraspinally and 20,000 units intravenously in glucose. Her spinal fluid was under increased pressure and was clear. There were 75 degenerating cells per cubic millimeter. In the evening the nasal tube was removed and was not required again.

Serum was given until the eleventh day. After this, she improved without serum. The rigidity gradually diminished and she remained rational. She was discharged on the twentieth hospital day and was able to walk with help. Her condition on discharge appeared to be approximately normal.

While in the hospital she received sedation in the form of nembutal suppositories, to which chloral hydrate was later added. She was catheterized every twelve hours for the relief of acute retention. Daily enemas were required for fecal impaction. Her temperature remained normal after the eighth hospital day.

This patient received a total of half a million units of serum. This is a larger dose than is usually reported, but the patient recovered in spite of statistical evidence that she should not have been expected to. It did not appear that she could have recovered if any less serum had been used.

The treatment used in this case represents to us conservative and conventional treatment. The patient made a very satisfactory recovery, although the anaerobic abscess was not incised for more than three days after the onset of symptoms and the case was unusually acute and fulminating. We did not use magnesium sulfate, although some men advocate the use of from 2 to 6 cc. of a 25 per cent solution intramuscularly every four hours in an effort to relieve spasm[9]. Methenamine intravenously has been recommended for its possible effect on the choroid plexus[10]. We have not used it.

Some men give much larger initial intraspinal doses of serum. The number of patients who die within twenty-four hours after admission to a hospital[10]—which is usually also within twenty-four hours after the first large instraspinal dose of serum—suggests to us that large initial intraspinal doses are dangerous. In none of the Rex Hospital cases have intraspinal doses larger than 5,000 units been given initially. Later doses are much larger. The Rex Hospital gross fatality rate of 20 per cent in 10 consecutive cases is to be compared with the report of a fatality rate of 19 per cent in 100 consecutive cases where none of the deaths occurring within twenty-four hours after admission were counted as deaths in making up the statistics[10].

Prognosis

The prognosis in tetanus is poor. Fatality rates reported are, with few exceptions, from 60 to 80 per cent.

Patients who develop tetanus within five days of the infection and those who develop convulsions within a few days after the onset of symptoms appear to have more virulent infections and almost always die. Spaeth[11], in reporting a series of 276 cases,

9. *Moore, R. M., and Singleton, A. O.:* Tetanus at the John Sealy Hospital, Surg. Gynec. and Obst. 69:146-154 (August) 1939.
10. *Vener, Hyman I., and Bower, Albert G.:* Clinical Tetanus, J.A.M.A. 116:1627-1631 (April 12) 1941.
11. Spaeth, Ralph: Therapy of Tetanus, Arch. Int. Med., 68:1158-1160 (Dec.) 1941.

states that 69 per cent of those patients with fever may be expected to die. We are of the opinion that fever is due to some symbiotic infection or infections and that the absence of this syndrome is, at least partially, responsible for the so called chronic (or mild) form of tetanus.

Long before the development of antitetanic serum, patients who had a long incubation period and a slow onset of symptoms, and who were given ample sedation were expected to recover. The wound was usually given free exposure.

Prophylactic antitetanic serum greatly reduces the incidence of tetanus, as has been shown by the rapid reduction in the incidence of Fourth of July tetanus by the use of serum. It also reduces the virulence of the disease in unprevented cases.

Treatment of tetanus must be begun early. The longer the time interval between the onset of symptoms and the institution of treatment the poorer the prognosis. However, we have been interested in the fact that we have found no residual effects of the disease in even the most severely ill patients who recovered. This is in spite of degeneration of the ganglion cells in the cord and changes in the gray matter of the pons and medulla. The earlier the wound receives treatment, the less the amount of toxin that will be available for damage to the central nervous system. It is doubtful if any patient could recover without treatment of the wound, and the earlier it is done the better the prognosis. It is noteworthy that open treatment of the wound, nerve section and sedation appear to have given better results in tetanus prior to 1884 than we claim now with antitetanic serum.

Age is important in prognosis: children recover readily; persons older than 60 have a much poorer prognosis. General physique is also very important[9,11,12].

There is marked difference of opinion as to the role of sex in prognosis, especially in different countries. This may be due to varied occupations, or it may suggest that sex plays no part.

Serum dosage is important in prognosis. Mild cases, treated early, tend to recover with small doses of serum. Larger doses are required in more severe cases and when treatment is delayed. Probably from 200,000 to 300,000 units is a minimum dose in severe cases. In the case reported here half a million units was used, and we do not believe any less could have been used successfully.

Medical and nursing care are very important. No set rules can be made to apply to all cases. Much of the treatment is symptomatic, and it must be supervised carefully.

12. Cole, Leslie: The Prognosis of Tetanus, Lancet 1:164-168 (Jan. 27) 1940.

Conclusions

The essentials for the successful treatment of tetanus are:

A. Prophylaxis
   1. Administration of prophylactic serum within twenty-four hours of the injury.
   2. Open treatment of wounds that could be points of origin for toxins.

B. Therapeusis
   1. Early treatment of all cases of tetanus.
   2. Prompt incision of the wound and irrigation with peroxide of hydrogen or potassium permanganate.
   3. Adequate sedation: barbiturates appear to be the drugs of choice, but chloral hydrate, avertin, opiates and bromides are of great value. Sedation by inhalation is very often fatal.
   4. Amply large doses of antitetanic serum, injected about the wound and given intravenously, intramuscularly and intraspinally. The first intraspinal dose should not be too large, but should be followed by much larger daily doses following spinal drainage. Serum should be continued as long as there are spasms and until rigidity is subsiding. A sufficient amount, determined for each individual case, must be given.
   5. Adequate amounts of nourishment and liquids, including globulins and saline, given intravenously or by nasal tube.
   6. Better than average medical attention and nursing care.

Serum is a great aid in our therapeutic armamentarium, but it is unquestionable that since serum has been provided other therapeutic measures have been neglected. As a result, our present fatality rates in persons who develop tetanus appear to be far higher than those reported before the use of

serum. Treatment then consisted in rendering the wound open and giving ample sedation. The physician destroyed the source of the infection, administered sedatives and allowed nature to effect a cure. H. C. Wood[4] lost 2 cases out of 15 by this method. At that time fatality rates were estimated at from 40 to 60 per cent; current fatality rates[6,9,11] are estimated at from 60 to 80 per cent.

Doubtless there are many incurable cases of tetanus. But the case reported demonstrates the possibility of effecting cures in cases that are incurable from a statistical standpoint. The earlier treatment can be instituted, the better the chances of a cure. With serum it should be possible to achieve lower fatality rates than those that prevailed before the development of antitetanic serum.

Whenever we become as efficient in the treatment of tetanus as we are in the prevention of the disease, tetanus will practically disappear as a cause of death.

Summary

1. A general discussion of tetanus is given.
2. Tetanus fatality and mortality rates are discussed and compared with lower fatality rates that prevailed before the advent of antitetanic serum.
3. Ten cases treated at Rex Hospital with a 20 per cent fatality rate are discussed. One case is reported in detail.
4. The essentials of the treatment of tetanus are discussed.
5. The importance of treating the patient as well as the disease is suggested as a means to lower fatality rates.

The Effects of War on Peacetime Complaints.—Reports from England indicate that most of the common run of complaints for which people in peacetime sought advice from physicians have largely disappeared, as was the case, also, in World War I. There is now for the people of England a great objective to be gained with less time for the personal worries, introspections, and preoccupations which so often lead to grief, despair, and illness. Hundreds of thousands, if not millions, of people have suddenly, through the exigencies of war, found their place in the sun. Participation in the common cause has provided for the time being new interests, new satisfactions, new communal endeavors. Recession of illness under these circumstances suggests a good sense of well being for the people without which a high standard of health is not possible. A crude but poignant reminder of this same effect on a national scale is the barometric rise of the suicide rate with bad times and fall of this rate with return of better days.—Arlie V. Bock: Fatigue, Tr. and Studies Coll. Physicians Philadelphia 10:78 (June) 1942.

THE STIMULATING INFLUENCE OF SODIUM CITRATE ON CELLULAR REPAIR IN THE KIDNEY INJURED BY URANIUM NITRATE

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and
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CHAPEL HILL

The work to be reported was done on forty-six dogs. Twenty-three controls received subcutaneously 5 mg. of uranium nitrate per kilogram of weight. Ninety-two per cent of these animals died between the tenth and twelfth days. Another group of twenty-three dogs each received daily for five successive days by intravenous injection 1/3 cc. of a saturated solution of sodium citrate per kilogram of body weight. At the end of the fifth day each animal in this group received 5 mg. of uranium nitrate per kilogram of body weight. Sodium citrate was continued for five additional days. The mortality rate in this group was 8 per cent, as compared with a mortality rate of 92 per cent in the control group.

The animals receiving sodium citrate showed very little evidence of illness. The animals who did not receive sodium citrate were severely ill; they lost weight, refused food, and died in ten to twelve days.

Blood nonprotein nitrogen and carbon dioxide curves in both groups were parallel for the first five days. After the sixth day the curves in the control animals continued to rise until death, while in the experimental animals by the eighth day the curves were moving toward normal.

In both experimental and control animals the stained sections of the kidneys showed similar degrees of injury on the fifth day. The slides from the controls showed on the tenth day severe tubular injury with little attempt at repair, while slides from experimental animals at the end of ten days showed an enormous amount of tubular regeneration. The necrotic cells had been replaced by a flattened type of epithelium described by Dr. W. deB. MacNider in 1915.

We varied the procedure in a small group of animals and were able to prevent death

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from uranium injury by starting the sodium citrate as late as twenty-four hours following the injection of uranium. It is possible that the beneficial effect of sodium citrate following uranium injury may have some clinical significance.

Abstract of Discussion

Dr. W. deB. MacNider (Chapel Hill): I think that this experiment of Dr. Donnelly and Dr. Holman is extremely significant. The striking thing is the rate of repair which takes place in the kidneys following the administration of sodium citrate and the type of epithelial structure which develops. The rate of repair runs parallel with the lack of retention of certain bodies in the blood, with their increase in the urine, and with the increased output of phenolsulfonphthalein in the urine. These animals survived, whereas a very high percentage of the animals which were not given sodium citrate did not survive. They were unable to effect a process of repair in the kidney tissues, and they died as a result of it.

This work is of interest to us, not only in terms of the use of sodium citrate to repair cellular injuries in the kidney (and that type of repair may be a type resistant to further injury), but especially in its broader implication. Here is a very simple chemical substance which operates on epithelial tissue in a state of injury and very greatly facilitates repair of that tissue. This finding has biological importance as well as a more narrow but yet more helpful therapeutic significance.

THE DIAGNOSIS AND TREATMENT OF THYROID DISEASES

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The diagnosis of thyroid diseases is not as a rule very difficult. Most of them may be recognized by objective findings. Subjective symptoms should be given careful consideration, but they may lead us far astray. Nervousness, which is a prominent symptom of toxic thyroid disease, may be due to anything from exophthalmic goiter to family incompatibility. Obesity may be due to hypothyroidism or it may be due to overindulgence at the table.

Types of Goiters

Most goiters may be correctly diagnosed in the office of the average practicing physician. For convenience we shall consider goiters as toxic or simple.

True exophthalmic goiter in its full blown stage may be diagnosed across the street. The patient presents a moderate enlargement of the neck, protruding eye-balls, and great excitability. There is usually a history of considerable loss of weight. Most of these patients have an enormous appetite and consume volumes of food. Often there have been personality changes.

Toxic adenomatous goiters present the same signs and symptoms, except that the patients are usually in less favorable condition physically, being as a rule of more advanced age, and the thyroid glands are usually much larger and have a more nodular appearance. Basal metabolism studies are not of enormous value in the diagnosis of either of these diseases. They are of value in the decision as to the proper method and time of treatment.

Adenomatous non-toxic goiters are the easiest of all to diagnose. They are not, however, always as harmless or as easy to treat as they appear to be. Every surgeon with a large practice has seen an acute thyroid reaction follow some operation upon a remote organ when he has failed to assess correctly the state of activity of an adenomatous goiter. Adenomatous goiters may be easily distinguished by their location and nodular appearance in the absence of toxic symptoms.

Malignancies of the thyroid are usually diagnosed by the pathologist. The physician or surgeon will be able to distinguish only the more advanced growths prior to operation. They have the same characteristics of other malignancies, and a great many of them are toxic.

Colloid goiters are recognized by their size, their smooth consistency and their lack of toxicity.

Adolescent goiters occur usually in teen-aged girls, are soft and uniform in consistency, and are not toxic.

Differential Diagnosis of Thyroid Disease and Neurasthenia

Physicians, surgeons, specialists and quacks all have one great class of patients in common. Patients with neurasthenia confuse us all. They waste the time of some of us and furnish a livelihood for others. Some of them cling to the best doctors and others follow the most weird quacks and cults. All are seeking an escape from reality in one way or another. The unwary doctor may ascribe some of the symptoms of neurasthenia to a fairly large thyroid gland, or the patient

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herself may have already decided upon the diagnosis before she consults the doctor. The patient with neurasthenia usually has a long history, with many episodes and complaints. She usually is able to furnish a glib recital of the professional opinions of at least twelve doctors relative to the nature of her trouble, no two of which are the same. A poor appetite, constipation, belching, sleeplessness, backache, pain around the heart, and weak spells are usual complaints. When the mind is centered upon the thyroid, the patient chokes. The patient is often a chronic failure. A willingness to undergo operation is characteristic of the surgical form of this disease. The operation of "exploratory laparotomy" must have been invented especially for neurasthenics. These poor souls suffer at the hands of all other surgeons as much as they are abused by thyroid surgeons. They often already have three or four abdominal scars when they present themselves for a thyroidectomy. It is merely a matter of what organ they decide to sacrifice as an alibi for their chronic invalidism and failure to weather the usual trials and responsibilities of life.

Neurasthenia is not a thyroid disease. It does not cause an elevation of the basal metabolism. The pulse is not constantly fast. It may speed up with excitement or exertion, but will slow down when the patient is at rest.

Patients with toxic goiter, on the other hand, usually give a history of definite duration. Most of them have been well until their present trouble. The basal metabolism is nearly always elevated. Almost all have a better than average appetite. Gastro-intestinal complaints are unusual unless a concurrent lesion of some other organ also happens to be present. Nervousness, palpitation, excitability, and loss of weight are usually present, at least to some extent. The thyroid gland may or may not be enlarged. Nearly all of these patients have a great unwillingness to undergo surgery, and particularly thyroid surgery. Often the combined efforts of the physician, the family, and the friends are required to persuade the patient to have the necessary operation.

A word of caution is in order. Neurasthenia is probably the most dangerous diagnosis that any doctor can make. It may mask actual pathology. All of us who have practiced for a considerable time have been embarrassed to find the gravest diseases present in patients who are confirmed neurasthenics. I personally could recite a good many cases.

Treatment

All toxic goiters are best treated by radical surgery, following adequate preoperative treatment. Lugol's solution, sedatives, high caloric diet and bed rest will prepare most patients for operation. The time required to reach an optimum condition for operation varies with individual patients. I consider it safe to operate when the pulse rate stays consistently below 100, when the patient is gaining weight, and when the basal metabolism is falling. Reduction in the size of the gland is a good sign. The exact rate of the metabolism is not important. The vital point to be determined prior to operation is whether or not the patient is improving upon treatment.

The technique of thyroidectomy varies with different surgeons. Adequate removal of tissue, careful hemostasis, and preservation of necessary anatomic structures are the important factors. As a rule, subtotal thyroidectomy performed in one stage gives the best results. Occasional patients require a bilateral lobectomy performed in two stages. This is usually necessitated by some complication quite aside from the goiter.

The toxicity of goiters runs in cycles. Even goiters which are absolutely refractory to treatment can be watched until there is a more quiet phase of the cycle, and then operated upon safely. There is no such thing as an emergency operation for goiter. The thyroid patient who is going to die had best be buried goiter and all. Right here I would pay my respects to preliminary pole ligations. They are meddlesome and utterly without value. The surgeon would do better to use up his superfluous energy in less violent forms of exercise.

Malignancies of the thyroid are treated just as are malignancies in other regions. Wide excision followed by extensive radiation appears to give the best results.

Simple adenomatous goiters should be removed surgically while they are quiet. Operation is relatively safe and toxicity develops later in about 20 per cent of such goiters, while 1 or 2 per cent will undergo malignant degeneration sooner or later. They are disfiguring and often are responsible for dangerous pressure upon the trachea. They

should be operated upon without preliminary medication. Iodine will sometimes produce a toxic change in a simple adenomatous goiter.

Operation for colloid goiters is in the nature of cosmetic surgery. At first thought it seems idiotic to reduce the size of a thyroid gland which is already functioning below normal, but actually operation appears to do no harm, provided that it is not too radical.

Adolescent goiters frequently require no treatment and disappear spontaneously. Iodine medication is often helpful and is never harmful in these cases.

The results to be expected following thyroid surgery depend largely upon the accuracy of the diagnosis, the thoroughness of the preliminary medical treatment, the selection of a wise time to operate, and the experience and technical ability of the surgeon. The mortality from such operations in the hands of competent surgeons can be kept in the neighborhood of 1 per cent. My own mortality has been two deaths out of 309 thyroid operations. One patient died of thyroid crisis six hours following a subtotal thyroidectomy for exophthalmic goiter, and the other of a collapsed trachea due to hemorrhage one hour following the removal of a large adenoma. Neither death was necessary. One was an error in judgment and the other in technique. I have injured one recurrent laryngeal nerve. The patient talks fairly well and I believe that her voice will improve. Fortunately, the modern surgeon may obtain a great deal of his experience vicariously. There is such an abundance of reliable literature on thyroid disease that the surgeon who is a careful student may prepare himself so as to avoid most of the complications of thyroid surgery.

Five Cases of Duodenal Diverticulum. By A. G. M. Martin, III, M. S., M. D. and D. deF. Bauer, A. B., M. D., C. M., McGill Medical Journal Volume XI, Number 5, pp. 10-23, October, 1942.

The authors present five original cases with admirable x-ray views of duodenal diverticulum. They point out that this condition is relatively common, often asymptomatic, but frequently confused with gallbladder disease, peptic ulcer, pancreatitis, and carcinoma of the stomach. X-ray examination makes accurate diagnosis possible. but evaluation of the relation of symptoms to lesion may be impossible. Fortunately most diverticula are harmless. The basis of treatment, medical and surgical, corresponds to that of peptic ulcer. From the literature a brief review of history, classification. anatomy, frequency, diagnosis, complications, and treatment of the condition is included.

MEDICAL AND HEALTH EVOLUTION IN DURHAM, NORTH CAROLINA

WILBURT C. DAVISON, M. D.

DURHAM

The medical and health service of a community is not so much an index of its civilization as a response to its local needs. As Dr. William H. Welch expressed it, "The interests of the public decide the matter." For example, Durham prior to the Civil War was a rural village, known as Prattsburg, and did not have the need for or the interest in the cooperative and organized medical and health services which a crowded industrial city requires. Before 1865 Durham had less than 100 inhabitants, but after General Johnston's surrender in 1865, Durham grew and rapidly became industrialized. By 1869, when the village was incorporated, the census had grown to 258. It was 5,485 in 1890, and by 1941 reached 60,000, with an additional 20,000 in the county outside of the city limits. *Pari passu* with this growth, Durham's medical and health problems increased. The town met and solved these problems similarly to other American communities which have undergone this transition from agriculture to industry.

At least nine factors are responsible for the health of a community: (1) physicians, (2) hospitals, (3) health department, (4) nutrition and dietary habits of the people, (5) interest of the population in their own health, (6) climate, (7) housing, (8) taxable wealth, and (9) inherited physique and racial stock of the people.

(1) *Physicians*: The naming of the town in 1854 and the county in 1881 for Dr. Bartlett Durham was propitious. Durham has had an adequate number of well trained physicians ever since. The Durham-Orange County Medical Society was founded with fifteen physicians in 1910, when the inhabitants of the city and county numbered 35,000, giving a ratio of physicians to population of 1:1,000—a very respectable figure. In 1941, Durham County had sixty-four physicians in practice, in addition to forty-eight at Duke Hospital. This means that there is one physician for every seven hundred and sixteen people in the county, which figure is similar to the national average, and nearly

From the Department of Pediatrics of Duke University School of Medicine and Duke Hospital, Durham.

twice as high as that for the remainder of North Carolina, in which the ratio of physicians to population is 1:1,284.

(2) *Hospitals*: The pioneer work for a hospital was started in 1888 by Dr. Albert G. Carr and was carried to fruition by Mr. George W. Watts, who built the Watts Hospital in 1895. This was the sixth general hospital in North Carolina, and the first one in the state to be approved as Class A by the American Medical Association. The location of the hospital was an example of careful planning; bacteriological plates were exposed in different parts of Durham, and the site with the fewest germs was selected. It had 200 beds in 1941. The Lincoln Hospital for Negroes was established in 1901 through the efforts of Dr. Aaron M. Moore and the money of Messrs. Washington, Benjamin N. and James B. Duke, in "grateful appreciation and loving remembrance of the fidelity and faithfulness of the Negro slaves to the mothers and daughters of the Confederacy during the Civil War." It grew to ninety-nine beds by 1941. The McPherson Hospital with thirty beds for eye, ear, nose and throat patients was built in 1926. In 1931 the Salvation Army Home and Hospital was brought to Durham. In 1930, the Duke Hospital was opened; its four hundred and ninety-eight beds brought the 1941 Durham total to eight hundred and twenty-seven, or one for every ninety-six people in the city and county. The national ratio is 1:292. The annual financial support of the Durham hospitals has grown from the original city appropriation of $1,200 to the Watts Hospital in 1895 to $71,609 to all the hospitals in 1941. From 1925 to 1941, the Duke Endowment paid the Watts, Lincoln and Duke Hospitals $1,202,197 toward the care of their charity patients.

(3) *The Health Department* of Durham cannot be discussed separately from that of North Carolina as a whole, for obviously they are interdependent. A survey of the health movement in the state, city and county illustrates its evolution from sanitation through preventive medicine to the stage of the treatment of disease.

Prior to the turn of the past century, except for the ancient aqueducts and sewers of Babylonia, Egypt, Greece, and Rome, and the Hebrew sanitary code and religious sanctions of Moses, public health and preventive medicine were nonexistent. No one knew until Pasteur's, Koch's, Loeffler's and Eberth's studies in the eighties and nineties that tuberculosis, diphtheria, typhoid fever, and other conditions were bacterial diseases. It is true that von Pettenkofer had established a hygienic laboratory in 1879 and had discovered how methods of sanitary reform and purification of soil and water had almost abolished typhoid fever in Munich, and that Health Departments in some European countries, as well as in Massachusetts, New York and a few other states were keeping birth, mortality and disease statistics and were enforcing quarantine laws; but by and large, until the present century, public health and preventive medicine were in as sad a state as was the practice of medicine. Our generation forgets, if they ever knew, that until von Behring discovered diphtheria antitoxin in 1890, and Ehrlich introduced salvarsan in 1910, and other brilliant discoveries followed, the best medical practice did not, and did not pretend to, cure more than four or five diseases. It was nature, and not the doctor that performed the cures. About all that medicine up to 1890 could do was to nurse, comfort and reassure the patients and alleviate in some degree their suffering.

Considering the state of medical ignorance which existed until the twentieth century, it is heartening to find that North Carolina and Durham were among the pioneers in seeking better health and medical conditions for their citizens. In 1877, under the stimulus of Dr. Thomas Fanning Wood of Wilmington, the North Carolina State Board of Health was born—the twelfth in the country. Among its first activities were the publication of educational pamphlets; the recording of vital statistics; attempts to prevent the spread of diphtheria, smallpox, typhoid and yellow fever; the establishment of sanitary privies, disinfection, and drainage; and purification of drinking water.

Dr. Wood died in 1892, and was succeeded by Dr. Richard H. Lewis, who worked untiringly for health progress. In 1895, bacteriologists were added to the board—a truly pioneering step. In 1903, the prevalence of hookworm in North Carolina was demonstrated by Drs. C. W. Stiles, W. S. Rankin and J. L. Nicholson, but it was not until 1911 that the hookworm treatment campaign, financed by the General Education Board, was started. In 1905, the State Laboratory of Hygiene was established; the fol-

lowing year, the North Carolina Association for the Study and Prevention of Tuberculosis was organized; and in 1907 the State Sanatorium for the Treatment of Tuberculosis was founded—all three of these projects being among the first in the country.

The modern era of public health and preventive medicine in North Carolina started in 1909, when the General Assembly provided for a full-time health officer, Dr. Watson S. Rankin, who soon was recognized as the outstanding state health officer in the country. During his sixteen years' tenure until his retirement in 1925 to become Director of the Hospital and Orphan Section of the Duke Endowment, Dr. Rankin made the health work of North Carolina a model for that of other states.

The campaign against syphilis in North Carolina under Dr. Carl V. Reynolds, with the financial aid of the Zachary Smith Reynolds Foundation, is now further advanced than that in any other state. By 1940 there were two hundred and seventy-six public health venereal disease clinics in seventy-nine counties in the state. Furthermore, by laws requiring physical examination of couples before marriage and of all pregnant women, the state acted to reduce the incidence of congenital syphilis, which probably had taken the lives of 26,000 children. There were estimated at that time to be 300,000 cases of syphilis in the state among whites and Negroes. It was equally prevalent in other states, but none has done so much about it.

The financial support to the State Board of Health has increased from the original grant of $100 in 1877 to $1,379,915 in 1941, of which $370,058 was appropriated by the legislature, $162,814 by the Zachary Smith Reynolds Foundation, $229,872 by the U. S. Children's Bureau, $493,706 by the U. S. Public Health Service, and $123,465 from fees received by the Laboratory.

The evolution of the health work in Durham City and County has paralleled that in North Carolina. From 1875, the City had a City Physician at a meager part-time salary, but without authority to prevent disease or to institute sanitary measures except under the sanction of a special ordinance, which was difficult to obtain. For example, one election for the city council hinged on the question of the keeping of hogs within the city limits; fortunately, the anti-hog ticket won. The ordinance requiring vaccination shook Durham politically. The Board of Health, organized in 1909, elected Dr. T. A. Mann Health Officer and drafted a Sanitary Code which compared favorably with any of those of 1941. In fact, it was so drastic that in 1911, one hundred and eighty-one of the Durham citizens petitioned the town council to repeal the charter of the Health Board. An epidemic of smallpox shortly thereafter taught the public the necessity of preventive measures, and the Board of Health became increasingly recognized as one of Durham's greatest assets, and correspondingly valuable to the health of the community.

Dr. Arch Cheatham followed Dr. Mann in 1913, and was succeeded in 1921 by Dr. J. H. Epperson. The Health Department's progress has gone forward at an ever increasing pace. Some conception of its growth can be obtained from a comparison of the expenditures and the size of the staff. In 1913, the appropriation was $6,140 and in 1941 $109,605. The staff has increased from a Health Officer and a nurse in 1913 to a force of thirty-eight in 1941.

The practical results of the cooperation of the Health Department, physicians and hospitals have been notable. The death rate in the city and county, which prior to 1913 was 20 per thousand, was reduced to 9.3 in 1941. The infant mortality rate has fallen to 64 in 1941.

(4) *The nutrition and dietary* habits of the people of Durham are far from ideal. The per capita consumption of milk, for example, is less than the daily pint recommended as minimum for good nutrition. Studies of the vitamin C content of the serum of many children and adults indicate that more fresh fruit should be eaten. The hemoglobin determinations of the blood of Durham patients reveal that there is a low intake of red meat, eggs, and green vegetables. An effort is being made through the schools to improve these dietary habits, because proper eating must be taught. Many of the patients in Duke Hospital and many youths in the Durham N.Y.A. Resident Center, at which a nutritional study has been made, still refuse to eat the balanced diets served to them. If advertising can develop a taste for bottled drinks, it also will arouse an appetite for proper articles of diet.

(5) *Interest of the population in their own health*: In spite of the adequacy of the physicians, hospitals and health department of

Durham, fifty-six of the one hundred counties in North Carolina in 1941 had a lower infant mortality rate than Durham, and thirty-eight of the forty-eight states in the country had a lower death rate than North Carolina. Of every one thousand babies born in the United States in 1941, forty-seven died during their first year, but in North Carolina fifty-nine died, and in Durham County sixty-four perished. As the Durham physicians, hospitals and health department are adequate, the most likely explanation for this situation is that the parents of Durham are ignorant of the medical resources available or are too careless or uninterested to use them. To quote the old adage, "You can lead a horse to water but you can't make him drink." The medical profession, hospitals and health department are helpless in reducing the number of deaths if the public does not avail itself of the medical resources which Durham offers.

(6) *The climate* of Durham is nearly ideal. The mean average temperature is 59.6 F. with a summer average of 71.3 F., and a winter average of 48.3 F. The annual average rainfall is 47.13 inches.

(7) *Housing: The living conditions of the* Negroes and poor whites in Durham leave much to be desired. Seventy-five per cent of the property in Durham is occupied by tenants, and 10 per cent is definitely substandard.

(8) *The taxable wealth* or assessed valuation of Durham City in 1941 was $90,410,366, and of the county $45,230,469. The tax rate of the city was $1.55 per hundred, and of the county $0.63.

(9) *Inherited physique and racial stock*: Seventy per cent of the population are native-born with several generations of Anglo-Saxon ancestry, whose title of "Tar Heels" was not earned by a weak people. The other 30 per cent is Negro, whose susceptibility to tuberculosis and certain infant diseases raises the death rate.

Summary

Durham City and County have made great strides in meeting the all important medical and health problem. Although Utopia has not been reached and probably never will be attained anywhere, Durham should be proud of her accomplishments.

A GLANCE AT ANCIENT MEDICINE

ALEXANDER C. MITCHELL
CHAPEL HILL

Medical practice several milleniums B. C. was the antithesis of the specialized profession it is today. Instead of being conducted by a group of individuals employed solely in ministering to the physically disabled, it was confined to the double-dutied priest-physicians. The universal belief that cause and cure of disease were determined by deities resulted naturally in the designation of churchmen as mediators between the gods and man, and temples of worship became dwellings of the sick.

The Russians, Assyrians, Babylonians, and Jews enjoyed their greatest prosperity from 4000-1000 B. C. During this period medical progress forged ahead under the influence of these peoples. Much in their medical thought was not original, however; for their interrelations with Egypt during that period left noticeable imprints of Egyptian ideas upon their medical science.

About 3000 B. C. a servant of Pharaoh, Imhotep by name, distinguished himself through his activities as priest, astronomer, and physician. His fame grew following his death, and the Egyptians deified him as their god of healing. The Greeks thereafter associated Imhotep with their Aesculapius, and the two gods of healing constituted a joint personality—"Imuthes-Asklepias".

Aesculapius, according to one story, was a mythical deity, left as a babe by his father Apollo in the care of Chiron the Centaur. From him the youthful Aesculapius learned the healing virtues of plants. While he was a young man his fame spread, and many temples were erected in his honor. The Temple of Epidaurus, the most noted shrine of Aesculapius, was a place of gathering for crowds of sick and maimed. Many healing wonders were attributed to the gods acting at this temple.

By some writers, however, Aesculapius is represented as having been a real person, living about 1250 B. C., who was deified following his death. Temples built in memory

This paper was delivered as a short historical talk before a weekly chapter meeting of Alpha Kappa Kappa Medical Fraternity at the University of North Carolina. The speaker, a second year medical student, gathered material from the University's medical library and prepared the paper as the first in a series of historical talks to be delivered at such fraternity meetings.

of this physician were widespread, some of the most celebrated being at the Aegean islands of Cos, Cnidus, and Rhodes (not far from the mainland of Asia Minor).

During the fifth century B. C. Grecian civilization and power reached their zenith. The Hellenic peoples had of late victoriously concluded their war with Persia. It was during this period, when Greece excelled in art, statesmanship, and philosophy, that Hippocrates appeared in Greece. He was born in the Aesculapian Temple on the island of Cos, about 460 B. C. His father, Heraclides, belonged to the order Aesclepiadae (a group of priest-physicians ministering to the sick at the temples). Hippocrates, having received his early education in the temple, left after his parents' death and went to Athens. At the time when he was studying in Athens under some of the greatest contemporary philosophers of the Grecian school, medical attainments and practice were limited primarily to the Aesclepiadae in their temples and to a few surgeons connected with the great armies of that period.

Reinforced with a broad background of philosophical training, Hippocrates began his intensive study of medicine. He early separated himself from the stationary life of the Aesclepiadae, into which he had been born, and traveled through such provinces as Thessaly and Macedonia as a general practitioner of medicine. Wherever he went, his fame preceded his arrival. His professional services were solicited by people of all classes. His good reputation was expanded further during the great plague which swept over Athens between the years 430 and 425 B. C. Artaxerxes, the king of Persia, long an enemy of the Hellenic empire, was said to have offered Hippocrates a large sum of money as inducement to become chief medical adviser to him and his army. Hippocrates, probably partaking of the intense nationalistic feeling of the period, refused the offer.

As a successful physician, Hippocrates not only applied his gift of acute observation to the treatment of his patients but also recorded many valuable observations for the use of succeeding medical generations. However, of the bulk of the so-called "Hippocratic writings" only nine have been generally recognized as actually written by him[1]. One quotation from his writings is indicative of his philosophy: "Life is short, opportunity fleeting, judgment difficult, treatment easy, thought hard; but treatment after thought is proper and profitable."[1]

The Athenian historian Thucydides recorded in a remarkably vivid picture the great plague of Athens. His acute observations are indicated in several short passages from his account of the Peloponnesian War:

"As a rule, however, there was no ostensible cause; but people in good health were all of a sudden attacked by violent heats in the head, and redness and inflammation in the eyes, the inward parts, such as the throat or tongue, becoming bloody and emitting an unnatural and fetid breath. These symptoms were followed by sneezing and hoarseness, after which the pain soon reached the chest, and produced a hard cough. When it fixed in the stomach, it upset it; and discharges of bile of every kind named by physicians ensued, accompanied by very great distress. In most cases also an ineffectual retching followed, producing violent spasms, which in some cases ceased soon after, in others much later. Externally the body was not very hot to the touch, nor pale in its appearance, but reddish, livid, and breaking out into small pustules and ulcers. But internally it burned so that the patient could not bear to have on him clothing or linen even of the very lightest description; or indeed to be otherwise than stark naked . .

"The body meanwhile did not waste away so long as the distemper was at its height, but held out to a marvel against its ravages; so that when they succumbed, as in most cases, on the seventh or eighth day to the internal inflammation, they had still some strength in them. But if they passed this stage, and the disease descended further into the bowels, inducing a violent ulceration there accompanied by severe diarrhoea, this brought on a weakness which was generally fatal . . .

"By far the most terrible feature in the malady was the dejection which ensued when any one felt himself sickening, for the despair into which they instantly fell took away their power of resistance, and left them a much easier prey to the disorder . . .

"Yet it was with those who had recovered from the disease that the sick and the

1. Davis, Nathan S.: History of Medicine, Chicago, Cleveland Press, 1903.

dying found most compassion. These knew what it was from experience, and had now no fear for themselves; for the same man was never attacked twice—never at least fatally."[2]

At about this same period (the fifth century B.C.) the Chinese and Japanese peoples, though highly intelligent, confined their medical practice to soothsaying and exorcism. These two peoples represent groups, in many ways progressive, whose thought and speculation were hampered by religious prohibitions which resulted in the evolution of an unscientific medical practice.

The Chinese "Doctrine of Pulse" was an interesting theory then in vogue. It stated that each organ of the body has its own proper pulse. So long as all of these units function properly—their pulses acting in sympathetic harmony—the organism exists in a state of health. Discord results in disease.

Organotherapy was practiced as extensively in China as in Egypt. Parts of organs, bodily secretions and excretions were administered as curative agents to the sick. The art of acupuncture (which consisted of thrusting fine needles into diseased parts of the body) was universally practiced. Some three hundred and eighty-eight spots for acupuncture were recognized[3]. Danger points were learned through experience. It has since that time been found possible to trace the course of arteries by noting the areas that were avoided by needles.

Japanese medicine has followed a course somewhat similar to that in China, although since the political upheaval in 1868 Japan has made rapid progress in scientific medicine.

Up through the periods so far discussed, all peoples have been seeking healing, mental and even physical, not from physician but from priest (who looked to religion for a cure). Gradually the bright light of the old gods faded. The time came when thinkers of the day had to decide whether Aesculapius or Christ was the true healer—the saviour. Great philosophers disputed the question[4]. One, Origen, argued that Christ was the true healer, in view of his many cures and the close proximity of his personality to that of man. He was the one most devoted to the relief of suffering of the human race. The world decided in favor of Jesus. The old gods died. Such a figure as Saint Sebastian replaced Castor and Pollux. A gradual transition occurred, tending to separate churchmen from the immediate medical treatment of the sick. As the new Christ was worshipped, priests devoted themselves more to the mental education and enlightenment of the people, while the administration of drugs and treatment of the physically disabled passed to the hands of the professional physician. This transition, as we know, did not continue steadily in the same direction, for during the Dark Ages it was the learned men of cloister and church who kept alive much of medicine which otherwise would have been lost in the maze of charlatanry and disuse.

Thus, the advent of the Christian era marked a change to a more empirical medical science. During this changing period there was developing the embryo of scientific investigation which was to blossom forth under the influence of later great scientists.

Within a period of one hundred years (seventh to eighth centuries) the Arabian crescent swept through the Eastern Empire, over Egypt, North Africa, and Spain. Unlike the Germanic hordes, this wave of Arabs became deeply appreciative of all that was best in Graeco-Roman civilization, especially the sciences. Cultivation of medicine was in every way enhanced by the Arabians.

The first great Arabian doctor—Ibn Sina, better known as Avicenna—became one of the greatest personages in all medical history. Born in 980 A. D., he developed into a precocious child, having the Koran by memory at the age of 10. He was a prolific writer. His famous "Canon" was a medical bible for a longer period than any other work. It represented the final compilation of Graeco-Arabic medicine. The art of therapeutics developed through his influence along more scientific paths.

Thus, from 4000 B.C. to 1000 A. D. medical treatment advanced from the stage of superstitious appeasement of the gods to a more rational and empirical application of drugs and specific cures. The foundation of recognized symptoms and systematic treatment laid by these early physicians made possible the ensuing development of medical research and practice which have been governed by an ever increasing faithfulness to the "scientific method".

2. Thucydides.: The Complete Writings of Thucydides (translated by Joseph Gavorse), New York, The Modern Library, 1934.
3. Osler, William: The Evolution of Modern Medicine, New Haven, Yale University Press, 1921.
4. Sigerist, Henry E.: The Great Doctors, New York, Norton, 1933.

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HAPPIER NEW YEAR !

One year ago this country was still smarting from the stinging defeat administered our forces at Pearl Harbor—a defeat so complete and so stunning that our Government dared not let the whole truth be known until a year had passed. The plight of our allies in Europe was anything but cheering; it seemed that the Austrian paranoic paperhanger might make his mad dreams of world domination come true before we could bring into play our potential productive power. German submarines were destroying our oil tankers and other shipping vessels at will, and Americans had begun to realize that it *could* happen here.

The last few weeks, however, have seen a definite change for the better in Allied fortunes. In spite of blunders, inefficiency, red tape, and the selfish greed of a minority of manufacturers and labor leaders, production has really gone into high gear; our raw recruits have become a mighty fighting force; the epic defense of Stalingrad by the heroic Russians first slowed, then halted, and finally pushed back the great Nazi machine. The Soviet army has gradually turned a desperate defense into a mighty offensive.

The junction of the British and American armies in West Africa came when Rommel was fleeing for his life from the British Eighth Army. For the two great armies, after traversing thousands of miles, to meet within the hour at the rendezvous, was, in the words of a brilliant editor, "achieving the impossible". It surpassed any timing ever conceived and executed by Hitler.

To the appalling loss of life and property caused by this senseless war there is the cheering antithesis that science is making markedly accelerated progress. The invention of synthetic rubber should make us independent of imported natural rubber; aviation is making giant strides, and cheap and practicable air transportation for the average citizen is almost certain after the war. In medicine, the quinine shortage has already led to the production of atabrine on a large and economical scale; the use of the sulfonamides has been greatly extended; plasma and the more concentrated albumin are saving more and more lives; and various immunizations will be tested on a vast scale.

While numerous gains have been made along material lines, of even greater importance is the return to spiritual values. Those who heard Rickenbacker's moving account of the rescue of himself and his companions must have been impressed with the simple, childlike faith with which he told of the daily prayer meetings for rescue and for food, and of the dramatic answers to their prayers. More copies of the Bible were sold last year than in any previous year. A commentator who interviewed a number of the men in our armed forces said that at least fifty per cent of them put on their list of things they wanted for Christmas a copy of the Bible.

On every front the Allies have seized and are holding the initiative. Even though we are warned by the experts to expect a long, hard pull before the war is over, the NORTH CAROLINA MEDICAL JOURNAL cannot refrain from wishing for its readers and for the world a happier New Year than has been anticipated since 1939.

* * * *

"LET'S GET IT OVER QUICK!"

Now that the cause of the Allied Nations looks brighter than it has since the beginning of World War II, some citizens have ventured to express the belief that the war may end before much longer, if we keep up our efforts. No sooner is such a hope expressed than its author is sternly squelched by one—

or by a squadron—of the "experts", who forecast from three to ten years more of the contest before the Axis powers are subdued.

The motive of these Sir Oracles may be—and doubtless is—most worthy. They fear that undue optimism may lessen our war efforts. This fear is refuted in a letter recently published as a full page advertisement of the Carrier Corporation, makers of air conditioning and refrigeration equipment. The letter was written by Arthur Hocking, a worker at the plant. It says so pithily what so many are thinking that it is reproduced almost in full:

"Seven weeks ago my only son was killed in the war . . .

"Since Hardy's death I've been doing a lot of thinking. What I'm trying to figure out is why so many of us are taking things for granted and not doing all we can to help win the war.

"Maybe it's because we keep hearing and talking about the war lasting for years. That sort of thinking might keep anyone from hurrying.

"It could be that this long-pull stuff was why we lost almost half a million minutes of production time last month through absences and tardiness.

"Anyway, I'm fed up with all this talk about a 5 or 10 year war. There's no sense to it. We can win this war quick. We've got to. If we don't your boys will be killed like mine was . . . .

"Sure this means sacrifices. It's no fun to work the night shifts. It's not easy to put 10 per cent of your pay into war bonds. None of us go for gas and fuel and food rationing.

"But these are nothing compared to losing someone you love. I know.

"Please, please don't wait for the casualty lists to come rolling in. Throw yourselves into high — now.

"Get going as though both the Huns and the Japs had to be licked in 1943. Maybe they will be if we really try.

"I suggest a new slogan for Carrier. Here it is—'Let's Get It Over Quick!'

"I hope you don't think I'm preaching. I'm not, I'm praying."

It may be pertinent to recall that in July, 1918, all the experts predicted at least three more years of war. The Armistice was signed four months later.

ARE WE DOCTORS OR SUCKERS?

Physicians must be astonished at times by the ever-increasing number of elaborate and costly publications which are sent to them by the pharmaceutical manufacturers. Many of these pamphlets are examples of the most expensive lithography and printing. Much of this "literature" is the result of the discovery that "patent" medicines can be sold through the pharmacist, but there exists a more profound reason than this, and one that promises to affect the whole course of medical research.

A brochure recently received from a well known pharmaceutical house will illustrate the point. It is an elaborately illustrated description of their beautiful new research laboratory, so well equipped with bright and shiny apparatus that it looks like the fantastic dream of a poor university research worker. This laboratory is only the last of a long list of such research institutes which the larger pharmaceutical houses have established. Such developments indicate that medical research, formerly the exclusive property of the universities, is rapidly passing into the hands of the commercial manufacturers, who are attracting to their laboratories many research workers from the schools.

Is this a fortunate or unfortunate development for the science of medicine? Obviously it can be both. On the one hand these wealthy laboratories can attack a problem with every facility that time and money can provide, and by sheer weight of material and numbers arrive more rapidly at a solution. The production of sulfadiazine by Robling, of the Lederle Laboratories, is an apt case in point.

On the other hand, it is far too much to expect that these commercial manufacturers will always be guided by altruistic motives; hovering in the background are stock-holders with eyes exclusively on the dividends. The pressure of competition will surely force on the medical profession remedies of highly doubtful value, many of which will be useless modifications of drugs already in the pharmacopeia. The intelligence of the physician will be challenged constantly. Will the representatives of pharmaceutical houses in the future be able to say, "Hello, Doctor," when they really mean, "Hello, Sucker"?

"DON'T STICK YOUR NECK OUT"

In the *Journal of the Association of American Medical Colleges* for November, 1942, Dr. Frank L. Apperly, Professor of Pathology at the Medical College of Virginia, pays his respects to the oft-quoted admonition, "Don't stick your neck out." He begins an editorial by saying that this expression, "of all the damnable weapons ever invented by man to tyrannize over his fellows, . . . is surely the most damnable. It kills initiative and makes cowards of us all."

Dr. Apperly speaks specifically of the discouraging effect upon the teacher who finds "his efforts reduced to naught by one sneering soul holding a class in thrall by the lash of his whip, 'Don't stick your neck out.' " The "sneering soul", it is assumed, is the bullying sort of student who discourages his fellows from venturing to express opinions or to ask for information, lest they be made ridiculous. Dr. Apperly's criticism may well be broadened to include graduate physicians, from fledgling interns to veteran practitioners, who are afraid to make definite diagnoses for the same reason, and who will "hedge" and construct cunning loopholes of escape when asked for positive statements of opinion.

An amusing example of such shrinking from a positive commitment was related by the late J. Chalmers da Costa, who overheard a surgical chief make this answer to a father's inquiry about the future of his sick son: "If your son gets well he will get about again. If he does not, he will not. If the balance of events shall remain equal, then he will remain in a state of status quo." Da Costa's comment was, "I take it there has been no opinion equal to this since the immortal opinion of Jack Bunsby of the Cautious Clara."

Another equally cautious opinion was expressed by a bewhiskered attending physician of a Brooklyn hospital, whose appointment was a tribute to seniority rather than to ability. It was a tradition in the hospital that this man would never offer a diagnosis until one of the house staff had given him the clue. On one occasion a group of the interns set a trap for him. When he came in to make rounds, he was greeted with the statement that they had had an argument as to the interpretation of a heart murmur in a new patient, and wanted him to settle it for them. Gravely he adjusted his stethoscope, listened awhile, then raised his head and said majestically, "The blood is passing through the heart."

As a matter of fact, the most astute medical veteran may make stupid mistakes, and the rawest intern or medical student may make brilliant diagnoses. Dr. Apperly would doubtless emphasize, however, that it is better to make an occasional mistake than to be afraid to venture an opinion, and that the person who does make an honest mistake should not be razzed by his fellows. There should be a spirit of good-natured give and take about every medical school, hospital, and professional group that makes for real progress by encouraging the most timid to respect his own opinion, by deflating the overbearing, bullying type, and by allowing all in the group to profit not only from their individual mistakes but from the mistakes of their colleagues as well. Instead of "Don't stick your neck out," let us say, "Don't be afraid to stick your neck out."

* * * *

THE VIRGINIA MEDICAL MONTHLY CHANGES EDITORS

After ten years as editor of the *Virginia Medical Monthly*, Dr. Wyndham Blanton retired from that position after the publication of the November number. This issue contained his swan song, "Haec Olim Meminisse Iuvabit", which is one of the best offerings in medical literature of recent times. Dr. Blanton has rendered a splendid service to medical journalism. Not only has the *Virginia Medical Monthly* served well the profession of that state; it has set a high standard for other state journals to aim at. As he vacates the editorial chair, the best wishes of the NORTH CAROLINA MEDICAL JOURNAL go with him.

Dr. Blanton is succeeded by Dr. M. Pierce Rucker, also of Richmond. Dr. Rucker himself knows how to write, and under his guidance we may expect the *Monthly* to maintain its high position among state journals. The first issue (December) under his editorship makes it evident that changing pilots will not affect the course of the vessel.

The name of Miss Agnes Edwards still appears on the masthead as business manager. Those who know her are certain that so long as she is on the job the editorial hands will be ably upheld.

CASE REPORTS

CLINICO-PATHOLOGICAL CONFERENCE

Bowman Gray School of Medicine of Wake Forest College

M. J. G., a 58 year old. single practical nurse entered this hospital complaining of swelling of the abdomen and of the lower extremities. She was very much debilitated and at times confused, and her history was not accurate as far as details are concerned. She had apparently been well until about six or eight months before admission, when she entered a hospital in another city because of shortness of breath and orthopnea. She remained in that hospital for a period of five weeks, and while there she first noted swelling of the abdomen, which had increased up until the time she entered this hospital. About a week after the onset of the ascites she first noted edema of the lower extremities which was also progressive and persistent. About the time of the onset of the ascites she noticed several large, non-tender masses in her abdomen, and she believed that these had grown slightly in size since that time. She had lost twenty-five pounds in weight, and for six weeks prior to admission she had had epigastric fullness and a burning sensation immediately after eating. This discomfort was apparently not relieved by food and had none of the other characteristics of peptic ulcer pain. For six weeks she had had occasional bouts of nausea and vomiting with some slight difficulty in swallowing, but there had been no hematemesis or blood in her stools. There had been no fever, chills or jaundice. She had grown progressively weaker and more emaciated. During the two weeks before admission she developed tenderness in the left flank, but there had been no urinary symptoms and no hematuria.

Past History: Some five to eight years before admission her right eye had been removed because of the development of a "hard eye". No details could be obtained from the patient or from her physician. Her family history was negative except for the fact that her father and two brothers died of tuberculosis.

Physical Examination: The patient was an extremely emaciated and debilitated woman who was at times confused and quite uncooperative. She appeared to be acutely and chronically ill. Her skin was very dry, and marked weight loss was evident. There were numerous small angiomas on the skin over the chest, abdomen, and face. There were several areas of senile hyperkeratosis, but no pigmented moles were seen. The right eye was entirely normal. There were occasional crepitant rales at both lung bases; otherwise the lung fields were clear. The lung bases were higher than usual and moved but slightly on inspiration. The heart was not enlarged and there were no murmurs. The blood pressure was 110 systolic, 50 diastolic. The abdomen was markedly distended and there was shifting dullness in the flanks and a palpable fluid wave. There was a huge mass which occupied almost the upper two-thirds of the abdomen. The mass was very hard, grossly nodular, and slightly tender. The mass could not be distinguished separately from the liver, and although it extended completely across the abdomen into the left flank it was thought to be entirely liver. The mass was more tender in the left upper quadrant. The spleen could not be felt. Pelvic examination revealed no abnormalities. There were large external hemorrhoids. There was very marked soft pitting edema of both legs and thighs, and of the abdominal and thoracic walls, with superficial weeping ulceration over both tibias.

A urinalysis showed the specific gravity to be 1.025. There was no albumin, but there was a 2 plus reaction for sugar on one occasion. The urinary sediment persistently showed 10 to 15 white blood cells, but no red blood cells or casts. The urine was negative for bile. A urine culture grew Bacillus coli and Streptococcus faecalis. The urine was dark brown in color, but tests for melanin and alkaptone were negative. Examination of the blood showed 3,740,000 red blood cells, with a hemoglobin of 11.5 Gm., and 14,600 white blood cells with 90 per cent polymorphonuclears, 2.5 per cent large lymphocytes, 5 per cent small lymphocytes, 0.5 per cent monocytes, and 2 per cent unclassified cells. The sedimentation rate was 34 mm. per hour. The nonprotein nitrogen was 38 mg. per 100 cc., the blood sugar 71 mg. per 100 cc., the total serum protein 4.2 Gm. per 100 cc. The icteric index was 15.5. The stools were persistently guaiac positive. The bromsulfalein test showed 40-50 per cent retention at the end of five minutes, 10-20 per cent retention

at fifteen minutes, and less than 10 per cent retention at thirty minutes. The glucose tolerance test was as follows: fasting, 88 mg. per 100 cc.; one-half hour, 121 mg. per 100 cc.; one hour, 90 mg. per 100 cc.; two hours, 80 mg. per 100 cc.; three hours, 64 mg. per 100 cc. Venous pressure in the arms was 110 mm. of saline, in the femoral vein 235 mm. of saline. An x-ray of the chest showed diminished expansion, bilaterally, due to fluid pressure from below the diaphragms. The heart seemed to be slightly enlarged to the left, possibly because of displacement from below. No active pulmonary disease was present. The patient was too sick for further x-ray studies.

Shortly after admission, a paracentesis was done and 5 liters of straw colored fluid were removed. The fluid had a specific gravity of 1.010, with 930 white blood cells and 330 red blood cells per cubic millimeter. Palpation of the abdomen after paracentesis revealed no additional information as to the character of the mass. Her course was steadily downhill, and she remained drowsy and uncooperative. On the fifth hospital day she passed some bloody mucus in her stool. The abdominal fluid recurred rapidly after the paracentesis and ascitic fluid drained almost continuously from the wound. Her drowsiness increased and the temperature terminally rose to 38 C. She became comatose on the eleventh day and died shortly thereafter.

Discussion

DR. TINSLEY R. HARRISON: If we assume —and I think such an assumption is justified—that the abdominal mass represents an enlarged liver, then the problem of differential diagnosis becomes a question of considering various causes of hepatomegaly. These may be divided into six general groups:

(1) *Malpositions and malformations.* In this group we may put ptosis of the liver, congenital cysts and congenital hemangioma. The firmness of the mass would exclude such conditions.

(2) *Circulatory disturbances,* including chronic passive congestion, whether due to heart failure, to phlebitis of the hepatic veins (Chiari's disease) or to Banti's disease. The congested liver is smooth, while the liver in this patient was nodular.

(3) *Disorders characterized by infiltration or degeneration.* Here we have to consider hemochromatosis, the fatty liver, amyloidosis, and depositions of blood pigment such as occur in pernicious anemia and malaria. So far as I know, none of these conditions produce a grossly nodular, extremely hard liver. Except for the presence of the nodules the condition is not unlike certain instances of amyloidosis, for chronic sepsis is not always a prerequisite for the development of lardaceous disease of the liver. However, amyloidosis of the liver is usually associated with splenic and renal amyloidosis and one commonly observes albuminuria and uremia without hypertension. The absence of albuminuria, as well as the nodular character of the liver, would make amyloidosis extremely unlikely.

(4) *Cirrhosis.* If the patient had either biliary or Hanot's cirrhosis, one would expect to find jaundice, and the large liver would be smooth. In the early or fatty stage the liver of Laennec's cirrhosis is enlarged but not nodular. Later, when it becomes nodular, the liver is small. The only form of cirrhosis which is likely to produce both enlargement and marked nodularity is syphilitic cirrhosis. However, we have no evidence of syphilis in the patient, and, furthermore, I have never seen a liver as large as this in a patient with syphilitic cirrhosis.

(5) *Infections.* Numerous bacterial, parasitic and fungus diseases may cause hepatic enlargement. The absence of fever would make any of these infections unlikely except some of the very chronic ones such as echinococcus disease. In this condition the liver may have an irregular surface but the nodules are not as hard as those displayed by this patient.

(6) *Neoplastic disease.* In the absence of evidence of disease of the blood, lymph nodes and other tissues, leukemia, lymphoma and sarcomas of the ordinary type can be excluded as very unlikely. Primary carcinoma of the liver is rare, but in this patient the absence of any demonstrable primary focus of carcinoma elsewhere would favor such a diagnosis. However, this disease usually occurs in younger people and ordinarily runs a very rapid course, the total duration from the onset of symptoms to death being a very few months. One has to give serious consideration to metastatic carcinoma from a primary focus in the gastrointestinal tract. The presence of a persistently positive test for occult blood in the stools favors such a diagnosis. The fact that no primary focus

was demonstrated means very little because the patient was so ill when admitted to the hospital that radiologic examination of the gastrointestinal tract could not be done. Certainly, if we take 100 patients, aged 58, with large nodular livers and positive occult blood in the stools, metastatic carcinoma of the liver would be much the most common condition.

There is in this patient one other condition which needs to be considered. I refer to melanotic sarcoma. Her eye was enucleated five to eight years ago, but in some patients the secondary disease of the liver may occur as long as twenty years or more after the enucleation of the primary focus in the eye. The average length of time between the appearance of the disease in the eye and death from liver metastasis is about three years, but there are many instances with a much longer interval. She had no melanin in the urine but melanuria is not a constant finding in patients with melanotic sarcoma.

The problem then would seem to resolve itself into a differential diagnosis between a primary, undiscovered carcinoma somewhere in the body, with secondary involvement of the liver, and melanosarcoma. The chief point in favor of the first disease is its greater frequency. However, in favor of melanosarcoma are the following considerations: (a) the liver was huge in size, and although tremendous enlargement sometimes occurs in metastatic carcinoma, enlargement of this degree is quite exceptional in this condition, but is the rule in patients with melanotic sarcoma. (b) The patient had no fever, and although a febrile course is not constant in secondary hepatic carcinosis, it is found in the majority of cases, while a good many of the people with melanosarcoma run an afebrile course. (c) There was no jaundice, and this complication is likewise the rule in hepatic carcinosis but is frequently absent in melanosarcoma of the liver. In view of these considerations, and especially of the fact that the patient presents the classical combination of a glass eye and a large nodular liver, I would think that the most likely diagnosis is melanosarcoma, secondary to a primary focus in the eye, which was removed a number of years ago. Of course, we do not know from the record that the patient's eye was removed because of such a condition, and she may have had glaucoma. However, if we assume that she did have a primary melanosarcoma of the eye, the whole picture fits in nicely together, and I believe this is the most likely diagnosis.

Dr. Harrison's Diagnosis

Melanosarcoma of the liver, secondary to a primary focus in the eye

Pathologic Report

DR. W. C. THOMAS: The body was cachectic and presented a yellowish-gray hue. When the peritoneal cavity was opened 800 cc. of pinkish fluid and a greatly enlarged, black, nodular liver were found. The liver weighed 6075 Gm., and on section the normal tissue was almost entirely replaced by tumor nodules, some of which were melanotic and others amelanotic. The radicals of the portal vein showed dilatation and the visceral organs drained by the portal system were congested. Some of the retroperitoneal lymph nodes were slightly enlarged and showed black pigment. The right kidney presented a whitish nodule measuring 1.5 cm. in diameter in the medullary portion. The brain and optic nerve were without evident lesion. On exposure of the right retro-orbital tissue through the supra-orbital process of the frontal bone a mass of black tissue measuring 1.5 cm. in diameter was seen. The bone marrow in the vertebral column was replaced by firm black tissue. Sections from the retro-orbital mass revealed a spindle cell sarcoma containing much blackish pigment. Evidence of metastasis was noted in the liver, kidney, thyroid gland, and bone marrow. Deposition of melanin pigment was found in the kidney tubule and other tissues of the body. The terminal event was congestive heart failure with superimposed early bronchopneumonia.

Anatomical Diagnosis

1. Melanosarcoma of the right retro-orbital space with metastasis to the liver, right kidney, vertebral bone marrow, thyroid gland and retroperitoneal lymph nodes.
2. Dilatation of the heart.
3. Pulmonary congestion.
4. Terminal bronchopneumonia, bilateral.
5. Right ocular prosthesis.

CLINICO-PATHOLOGICAL CONFERENCE

City Memorial Hospital

WINSTON-SALEM

Mr. P. B., a 23 year old white male, was admitted to the hospital September 15, 1942, complaining of nausea, vomiting, hiccoughs and marked jaundice of three weeks' duration and of progressive severity. The patient had eaten some sausage three weeks prior to his admission, and soon afterwards became nauseated and vomited. Jaundice followed. He was confined to bed. Vomiting occurred after the intake of food, and hiccoughs were present practically all the time. Stools were noted to be pasty-white for several days following the onset, but later no fecal matter was passed. The patient ate very little; he had lost some weight but did not know how much. Four days before admission his abdomen became distended, and this distention increased until his breathing became difficult. He had "gas on the stomach", relieved by belching. No medical advice was sought until the day of admission.

The patient stated that he had had indigestion—that is, belching and discomfort in the epigastrium after meals—for many years. In 1938 he was in an automobile accident and suffered a fractured pelvis and ruptured urethra. He was in the hospital for two and one-half months. There was no history of other accidents, operations or severe injuries.

Physical examination revealed an undernourished young white male lying in bed, hiccoughing and in apparent pain. Marked generalized jaundice was present. The eyes appeared sunken. The temperature was 100.2 F., the pulse 100, the respirations 24 and the blood pressure 125 systolic and 60 diastolic. The head and neck were negative except for jaundice. The lungs presented no abnormal findings. The heart was regular in rate and rhythm, with no murmurs or thrills. The liver was very firm and smooth, and was palpable on the right side down to the umbilicus. It was tender to pressure. In the epigastrium a firm, sharply outlined border was felt 3.5 to 4 cm. below the xiphoid; this also was thought to be liver. The spleen could not be palpated. There was a large sore over the sacrum—a result of his confinement to bed in 1938 after the automobile accident. There was pitting edema of both lower extremities.

On admission the icteric index was 120; the van den Bergh reaction was immediate direct; the bilirubin was 13.3 mg. per 100 cc.; cholesterol, 192 mg. per 100 cc.; nonprotein nitrogen, 37 mg. per 100 cc.; serum proteins, total 4.28 per cent, albumin 1.43 per cent, globulin 2.85 per cent, albumin-globulin ratio 1:2; the prothrombin time was 76 per cent of normal. The urine was cloudy, amber, and acid with no sugar, a trace of albumin, a 4 plus reaction for bile, and 3-7 white blood cells per high power field. There was not enough urine for a specific gravity test. The urobilinogen was positive in a 1-30 dilution, negative in a 1-50 dilution. The urobilinogen repeated two days later gave exactly the same results. The Kline test was negative. The blood count showed 4,020,000 red blood cells, hemoglobin 12 Gm., white blood cells 29,950 with 20 per cent stabs, 2 per cent juveniles, 60 per cent segmented cells, 7 per cent lymphocytes, 10 per cent eosinophils and 1 per cent basophils. The stool examination was negative for ova and parasites. A plain film of the abdomen failed to show any diagnostic change.

The patient complained of abdominal pain and difficulty in breathing. He hiccoughed a good deal. Wangensteen drainage was started the day of admission, and a rectal tube was inserted. The hiccoughs continued, and the following day he was nauseated and vomited. This same day the nurse's notes revealed that he had an episode of very intense pain associated with passage of urine; no other such episodes were recorded. On September 17 abdominal paracentesis was performed and 3,500 cc. of bile-stained fluid was removed. There was considerable relief after the paracentesis, but the symptoms recurred, with nausea, vomiting, abdominal pain and hiccoughs. The patient was given morphine and other narcotics, and sedatives. Daily infusions of plasma and frequent infusions of glucose were given. On September 22 a laparotomy was performed under local anesthesia; a biopsy of the liver was taken and the abdomen was closed. On September 23 he became irrational, and a dark brown fluid came from his mouth. His pulse became weaker and he finally expired. The temperature varied between 98 F. and 100.4 F. until September 21. After that it fell and did not

rise above 98 F. The pulse varied with the temperature from 80 to 120.

Examination of the fluid removed by paracentesis on September 17 showed 132 cells per cubic millimeter with 73 per cent lymphocytes, 10 per cent polymorphonuclears, 17 per cent endothelial cells. Smears revealed no organisms, and a culture was negative. The blood culture on September 21 was negative. The blood sugar on September 22 was 31.7 mg. per 100 cc. On September 21 the white blood cell count was 42,500 with 38 per cent stabs, 54 per cent segmented cells, 1 per cent monocytes and 7 per cent lymphocytes. The polymorphonuclears showed toxic granulations. No eosinophils were found. On September 22 the white cell count was 41,400 with 76 per cent stabs, 1 per cent juveniles, 20 per cent segmented cells, and 3 per cent lymphocytes. An attempt to give a barium meal on September 21 was unsuccessful, as the patient could not cooperate.

Discussion

DR. W. M. JOHNSON: We have here a 23 year old white male with progressive jaundice, probably obstructive in type. The liver was large, smooth, firm and tender. There was obstruction to the portal circulation, with ascites and edema of the lower extremities. He had only slight fever. There was a marked leukocytosis with a relative increase in the number of polymorphonuclears, and there was also a marked increase in the number of eosinophils on two different counts. The Kline test was negative. The patient gave a history of long standing indigestion and "gas on his stomach". He was emaciated. He suffered from persistent hiccoughs which may be clinically significant.

The first thing to be considered is that his accident, four years previously, might have played a part. A ruptured urethra is a very serious injury; he may have had a residual infection in the pelvis which caused a suppurative pyelophlebitis. Appendicitis with abscess formation could also have given rise to a suppurative pyelophlebitis. The patient did have a high leukocyte count and an enlarged, tender liver, but one would expect more fever and chills with pyelophlebitis. The same is true of suppurative cholangitis.

An abdominal type of Hodgkin's disease should be considered, as this may occur without any superficial lymph node enlargement. Although ascites is common in abdominal Hodgkin's disease if there is pressure on the portal circulation, deep progressive jaundice is not so common. Furthermore, the spleen is usually felt in abdominal Hodgkin's disease and the course is apt to be much longer than that in this case.

We can rule out any type of leukemia because of the blood counts, the absence of any glandular enlargement and the absence of splenomegaly.

An abscess of the liver is to be considered, but the course was much shorter than we would expect in that case; there was nothing to suggest amebic infection. Cirrhosis of the liver of the hypertrophic type must be considered. Again, the absence of splenomegaly, as well as the rapidity of the course, is against this possibility. Although a stone in the common duct could cause jaundice, ascites is uncommon. The temperature is usually higher and there are usually chills.

My diagnosis is malignant disease of the liver—carcinoma or sarcoma; I will not say whether primary or secondary. I believe malignancy comes nearer fitting the picture than does any other disease. As to the possibility of sarcoma, the accident could have caused some damage to the liver, with subsequent development of sarcoma; or trauma to bone at the time of the accident might have given rise later to a primary bone sarcoma with metastases to the liver. The patient is in the right age group for sarcoma, although this occurs much less frequently than carcinoma of the liver. Primary carcinoma of the liver has been reported in patients 15, 20 and 22 years old. Although primary carcinoma is, of course, much less frequent than secondary carcinoma of the liver, I think that this might be primary carcinoma. Carcinoma certainly would explain the rapid downhill course and the emaciation. Carcinoma may cause sufficient destruction of liver tissue to give a low blood sugar. Hiccoughs is a symptom of liver damage and pressure on the diaphragm. The absence of splenomegaly fits a diagnosis of carcinoma of the liver. An enlarged, tender liver and leukocytosis are often present in malignancy of the liver. Eosinophilia is also a common finding; the disappearance of the eosinophilia later in the disease may possibly have been due to a late severe infection, and the episode of pain on urination suggests that the genito-urinary tract may have been the site of such infection. Renal calculus may have

been present, possibly with hydronephrosis. We note that the urine contained a trace of albumin.

DR. W. L. GRIMES: Do you think that the spleen might have been enlarged but not palpable because of the amount of fluid present?

DR. W. M. JOHNSON: It is possible.

INTERN: We could not feel the spleen after paracentesis.

DR. C. H. MCCANTS: Does carcinoma of the liver usually give a high leukocyte count?

DR. W. M. JOHNSON: Counts have been reported as high as 36,000.

DR. C. H. MCCANTS: How do you explain the leukocytosis in carcinoma of the liver?

DR. J. LEVINE: Usually on the basis of reaction to the products of degeneration and necrosis, seen commonly in carcinoma of the liver.

Clinical Diagnosis

1. Acute hepatitis
2. Possible carcinoma of the liver

Dr. Johnson's Diagnosis

Carcinoma of the liver

Anatomical Diagnoses

1. Primary carcinoma of the head of the pancreas
2. Generalized carcinomatosis
3. Direct extension of carcinoma to duodenum
4. Cystitis cystica
5. Pulmonary atelectasis
6. Recent laparotomy
7. Old fractures of pelvis

Anatomical Discussion

DR. J. LEVINE: The carcinoma in the head of the pancreas was adherent to the overlying duodenum and had ulcerated through it, with edema and pseudo-papilloma formation in the immediately adjacent duodenal mucosa. These slides show the extension of the carcinoma from the head of the pancreas through the wall of the duodenum. All the malignant lesions showed extensive suppuration, degeneration and necrosis. The periportal region was all bound down by malignancy and adhesions; in this region, between the liver and the duodenum, was a large, walled-off abscess cavity filled with pus and having apparently originated in a broken-down mass of malignant tissue. The liver was filled with metastases and weighed over 4000 Gm. The spleen was also enlarged, weighing 525 Gm., although it contained no metastases. There were many metastases in the region of the portal fissure. There was no underlying cirrhosis of the pancreas. I could open and trace the distorted common and hepatic ducts. I could not trace the cystic duct. The gallbladder was very small.

MEDICOLEGAL ABSTRACT

J. F. Owen, M. D., LL. B.
Raleigh

Evidence: The opinion of one expert witness based upon the opinion of another such witness is incompetent as evidence.

Inasmuch as doctors are frequently called upon to give testimony in cases of a medicolegal nature, this case was selected in order to differentiate between expert testimony of fact and expert testimony of opinion.

The case at hand is a criminal action, the bill of indictment of which charged murder in the first degree. The evidence presented at the trial in Superior Court tended to show that on Sunday, May 31, 1942, at about 10 a. m., the dead body of a woman was found in the kitchen on the second floor of her garage apartment. The body was partly enveloped in a sheet, and a portion of the sheet was tied around the deceased woman's legs. One of the jets on the gas stove in the kitchen was about half open, and the dead body had a cherry red color, especially on the right side, where the blood had settled. The only bruises found were one on the right upper forearm, and one on the right hip. The bedroom in the apartment was found to be disarranged, probably indicating scuffling. The body of the deceased was buried, but later, by direction of the court, it was disinterred, and an autopsy was performed. The evidence of the doctors present at the postmortem examination tended to prove that the woman had died of carbon monoxide poisoning. The defendant, a colored woman, who had been employed as maid and cook for the deceased, was arrested, and shortly thereafter made a written confession. Later, at the trial, she denied any connection with the death of the deceased, and denied that the statements made to the various State's witnesses were voluntarily made.

The jury returned a verdict of not guilty of murder in the first degree, but guilty of murder in the second degree. From the judgment pronounced on the verdict of the jury, the defendant's attorney appealed to the Supreme Court, setting forth numerous exceptions. The one which is of particular interest to the medical profession was one concerning a question asked of the toxicologist.

When this case came on to be heard before the Supreme Court upon appeal, the Justice writing the opinion explained that the State sought a conviction of the defendant upon the theory that the deceased came to her death as a result of asphyxiation, or carbon monoxide poisoning, from gas issuing from a partially open jet of the kitchen stove. The autopsy was performed some time after the death of the deceased, and after she had been embalmed, and as a result, no accurate quantitative test could be performed. The pathologist testified, however, that there was no other cause of death, as far as he could determine, except carbon monoxide poisoning. With this opinion the toxicologist appearing for the State agreed, admittedly basing a substantial part of his testimony upon the findings of the pathologist.

The appellate court sustained the exception made by the defendant's attorney with reference to the testimony given by the toxicologist, and cited the case of **Dunegan versus Appalachian Power Company** as authority, which is as follows: "It is well settled that in the examination of experts as to matters which they have not themselves observed, testimony as to their opinions should be based on hypothetical statements propounded in proper questions, not on the testimony of other witnesses whom they have heard testify." The court also referred to the rule established in the suit of **Martin versus Hanes Company**, which is as follows: "While a medical expert may not express an opinion as to a controversial fact, he may, upon the assumption that the jury shall find certain facts to be as recited in a hypothetical question, express his scientific opinion as to the probable effect of such facts or conditions."

As a consequence of the decision of the Supreme Court in this particular case, as above stated, error was noted, and a new trial ordered. (North Carolina Supreme Court, Vol. 222, Page 242. Decision rendered Fall Term, 1942.)

MILITARY MEDICINE

ANNOUNCEMENT

Office for Emergency Management
War Manpower Commission

It is of the utmost importance that the Procurement and Assignment Service for Physicians, Dentists, and Veterinarians, immediately has the name of any doctor who really is willing to be dislocated for service, either in industry or in overpopulated areas, and who has not been declared essential to his present locality. This is necessary if the medical profession is to be able to meet these needs adequately and promptly. We urgently request that any physician over the age of 45 who wishes to participate in the war effort send in his name to the State Chairman for the Procurement and Assignment Service in his State.

Frank H. Lahey, M. D.
Chairman, Directing Board

The following letter has been received from Dr. Hubert B. Haywood, State Chairman of Procurement and Assignment Service for North Carolina.

December 29, 1942

Dr. Wingate Johnson, Editor
North Carolina Medical Journal
Winston-Salem, N. C.

Dear Wingate:

Dr. Webb Griffith of Asheville was kind enough to represent North Carolina at the meeting of the Procurement and Assignment Service in Atlanta. Dr. Griffith reports that it was brought out that North Carolina as a whole has one doctor to every 2190 people, but obviously not uniformly distributed. The latest report gives North Carolina's percentage of physicians already in service as 167 per cent of her quota. It is also stated that there will be no effort to get more doctors out of any of the Southern states during 1943, except for an occasional doctor who is young and single or a specialist who is anxious to get into some particular job. It is estimated that the country as a whole can supply 11,000 more doctors from those now in practice, and that then no more can be spared. All graduates, after a year of internship, will go into service if they can qualify physically. The Government has assumed the responsibility of furnishing medical care for those communities suffering from a shortage of doctors because of camps or war plants. In this state Wilmington, New Bern and Fayetteville are the designated areas. The procedure in this state will be to have a survey made of Wilmington, New Bern, and Fayetteville by a member of the U. S. Public Health Service. Then the Procurement and Assignment Service of this state will be given the opportunity to see if there can be a relocation of doctors in the state to handle the situation.

To date this is the latest information. As soon as I have additional information, I shall be glad to notify you.

Sincerely yours,
Hubert B. Haywood, M. D.

OFFICE OF CIVILIAN DEFENSE

Plasma for Civilian Defense

The Medical Division of the Office of Civilian Defense and the United States Public Health Service report the current status of the blood plasma program which was initiated in the early spring.

The report indicates that 130 hospitals have now received grants-in-aid and are preparing reserves of plasma to total at least 63,130 units. In addition to this reserve, 27,500 units of frozen plasma have been obtained through the Army and Navy from blood collected by the American Red Cross. This supply has been distributed. The Medical Division has also procured 37,500 units of dried plasma from blood collected by the American Red Cross, and this supply is in process of distribution.

The total reserve, which is largely concentrated in the 300 mile coastal target areas, will be 126,630 units for treatment of casualties resulting from enemy action. In addition, 1250 units are in Puerto Rico and 250 in Alaska.

In addition to these sources of plasma, the Red Cross is distributing to target areas 5,000 units which will be available to the Office of Civilian Defense for treatment of civilian casualties resulting from enemy action. Many hospitals which have not received grants under the OCD-USPHS program are also preparing plasma reserves which total approximately 50,000 units.

Plasma required for the treatment of war-related injuries may be obtained by any community through its Chief of Emergency Medical Service. To meet such emergencies, plasma may be transferred: (1) within a state by the State Chief of Emergency Medical Service; (2) within a Region by the Regional Medical Officer; and (3) from one Region to another by the Medical Division, U. S. Office of Civilian Defense.

Nurses' Aides for Veterans' Hospitals

Training of larger numbers of nurses' aides and additional hours of service for those already trained will be necessary as a result of a request from Brig. Gen. Frank T. Hines, Administrator of Veterans Affairs, for the assignment by the American Red Cross of nurses' aides to Veterans Administration Facilities. The Medical Division of the Office of Civilian Defense issued a memorandum October 31 to its Regional Medical Officers announcing the new arrangement.

The Red Cross in a memorandum addressed to its Area Offices for transmission to local chapters approved this assignment for nurses' aides, but emphasized that the needs of the civilian hospitals and other community organizations should not be neglected. In communities without facilities for training nurses' aides, an effort should be made to recruit them from cities nearby, the memorandum said. Requests should be sent to the Area Offices of the Red Cross.

Nurses' aides who serve in Veterans Administration Facilities will be paid at the rate of one dollar a year, since the Veterans' Administration may not under the law accept nursing service without payment for it. These aides will then be considered government employees and must be American citizens. The Veterans Administration is prepared to furnish quarters, meals and laundry when necessary. Assignment of aides to the hospitals will be the responsibility of the local Red Cross nurses' aide committee, of which the local chief of Emergency Medical Service is a member.

New Method of Administering Morphine

Because of the critical shortage of tin, the U. S. Office of Civilian Defense has been unable to procure syrettes for administration of morphine by physicians of Emergency Medical Service. To meet this serious difficulty, a new device using glass and plastic has been developed.

This device consists of a small, sealed-glass ampule containing ¼ gr. or ½ gr. of morphine in solution. This solution is under sufficient pressure to eject the entire contents. A piece of transparent plastic tubing encloses the neck of the ampule and connects it to the hub of the needle. The shaft of the needle is enclosed in a small glass tube, to which is attached a stylet. At the hub of the needle within the plastic tube is a small filter.

Following is the method of using the ampule:

1. The body of the ampule is grasped in the right hand.
2. The glass tube protecting the needle is withdrawn by a twisting and pulling movement of the fingers of the left hand.
3. With the needle pointing down and the body of the ampule vertical to the skin, the needle is inserted by jabbing it under the skin.
4. When the needle is in place, and with the ampule vertical to the skin, pressure is exerted with the thumb and two fingers on the plastic tubing to break the neck of the ampule. It is important that the ampule be held vertical to the skin, in order that morphine may not be lost by improper technic.
5. The pressure within the ampule ejects the contents. The filter prevents glass splinters from clogging the needle.
6. When the ampule is empty, the needle is withdrawn and the whole device is discarded.

First Aid Training No Longer Required For Staff Units In Citizens Defense Corps

Members of staff units of the U. S. Citizens Defense Corps are no longer required to acquire ten hours of training in first aid, the U. S. Office of Civilian Defense has announced. It was pointed out that members of staff units would be employed in the headquarters of the Citizens Defense Corps rather than at the scene of air raid emergencies.

Air raid wardens, auxiliary police, auxiliary firemen, decontamination squads, messengers and members of the drivers corps are still required to have at least ten hours of first aid training. Nuses' Aides are required to take the regular first aid instruction in addition to their specified training given by the American Red Cross in connection with approved hospitals. The Medical Corps, a professional group, has special training as directed by the Medical Division of OCD.

Federal Financing of Transportation To Emergency Base Hospitals

Federal financing of transportation necessary in evacuating casualties and other hospitalized sick to Emergency Base Hospitals can be accomplished only through State evacuation authorities, Dr. George Baehr, Chief Medical Officer of the Office of Civilian Defense, points out in a circular (Medical Series No. 22) prepared for officials of the Emergency Medical Service.

Allotment of funds for all phases of evacuation will be made by the Office of Defense Health and Welfare Services, through its Regional Directors, to State evacuation authorities and the several State agencies concerned in the fields of EMS, health, welfare and education. Evacuation of casualties and other hospitalized sick from casualty receiving hospitals to emergency base hospitals will be initiated and carried out by the Emergency Medical Service, but it may take place concurrently with an evacuation of other priority groups. The directive urges that Regional Medical Officers, State Chiefs of Emergency Medical Service and State Hospital Officers participate in the planning carried on by the State authority in order that provision may be made in advance for the financing of this phase of evacuation.

BULLETIN BOARD

SECRETARY'S MESSAGE

As a society of physicians facing a New Year we would do well to be reminded of the traditional custom, that of taking inventory. In this way we may profitably consider some events in our recent experiences and some of the problems we will be called upon to meet.

The past year has indeed been an eventful one, for our Society finds itself today in the midst of a World War whose influence upon the lives of each of us will be immeasurable. Several hundred of our fellow physicians have been called from our state and are with the armed forces of our country now scattered to the far ends of the earth. (May I pause for a moment to say to these men, "Your Society is justly proud to claim you as one of its members. You are making a tremendous sacrifice, at the same time responding to an expression of the great tradition of Service which has ever been inherent in our profession. May the Great Physician bless you and keep you and soon bring this horrible war to an end so that you may return to the rank and file of organized medicine in North Carolina and to our American way of life.")

By official action of the House of Delegates at Charlotte in May, 1942, the policy of waiving dues of members serving with the armed forces will be continued in 1943. Names of members now in service will be automatically transferred to the 1943 Roster of Members.

Your State Medical Society represents organized medicine in North Carolina and can function to its full efficiency only by the cooperation and interest of each of its 1917 members (largest membership in the history of the Society). Here we must consider some of the problems we will be called upon to meet:

1. Doctors for the armed forces must be supplied.
2. Our expanding program of industrial medical service must be maintained.
3. The civilian population must still be cared for.
4. In spite of depletion of medical staffs, the expanding program of hospital service must be taken care of.
5. Our future doctors—by this I mean as an organization—must work in harmony with the Man Power Commission in a determined effort to see that the future supply of physicians will not be curtailed.

Naturally the work of your State Society has been somewhat restricted during the past year. Some of the district meetings have been called off; nevertheless, your President and I have visited various sections of the state and expect to continue as far and as long as thin tires and gasoline rationing will permit.

President Rankin of the American Medical Association, in his address before State Secretaries and Editors at Chicago in November, urged that smaller medical groups such as county, district and state societies continue to hold their meetings in spite of the fact that the meeting of American Medical Association and those of the Colleges of Physicians and Surgeons have been abandoned for 1943.

This office feels that, to guard the home front effectively, the need for active and alert medical societies is more acute than ever before. Medicine must be well organized in order to meet adequately the many war-time problems which are arising. You are obligated to your colleagues in military service, to the public, to your profession and to yourselves to see that your county, district and state medical societies remain or become influential organizations in 1943. They need and should have your active support.

Three important things to remember are:

1. Attend meetings.
2. Take part in committee work.
3. PAY YOUR DUES NOW.

Finally, just a word to secretaries of county societies:

Please, as early as you can, send in your reports, including not only the names of your officers and your members but your delegates to the meeting of the State Society, too. Remember to keep me informed as your members leave for military service and to send me any other items of interest from your society. We are eager for news of anything that happens in your society.

ROSCOE D. MCMILLAN, M.D.
Red Springs

News Notes From the State Board of Health

Two hundred employees of the State Board of Health, including directors, consultants and others, met in the auditorium of the State Laboratory of Hygiene in Raleigh during December, and launched the North Carolina Academy of Public Health, which, so far as is known, is the first organization of its kind in the United States.

The objects of this new organization are:

1. The cultivation of the science of public health.
2. The advancement of the character and honor of the public health profession.
3. The elevation of the standard of education of all public health workers.
4. The promotion of public health and extension of its benefits to ALL people.

This newly-created organization elected the following as its first group of officers: Dr. George M. Cooper, Assistant State Health Officer, President; Dr. Ernest A. Branch, director of the Division of Oral Hygiene, vice-president; and Mrs. Anne B. Edwards, the efficient secretary to the State Health Officer and well-known in the circle of professional and business women, secretary and treasurer.

* * * *

The Office of Price Administration has ordered an immediate investigation of the practice of making an extra charge for paper cups in which soft drinks and refreshments are served, it was disclosed in a letter received from Donald H. Wallace, Director of Industrial Manufacturers' Price Division, by Dr. Carl V. Reynolds, North Carolina State Health Officer.

In the meantime, Dr. Reynolds was requested to bring further complaints against this practice to the attention of Norman C. Shepherd, State Attorney in North Carolina for the OPA, whose address is 227 East Edenton Street, Raleigh. Already, the names of many alleged violators have been forwarded to the OPA, together with the names of informants sent to Dr. Reynolds during the past several months.

On August 2, Dr. Reynolds was informed by Mr. Wallace, the OPA warned sellers of beverages in paper cups to discontinue this practice, which has been ruled illegal, unless it can be shown that the charges were in force as early as March, 1942.

"We are not interested in the enforcement of ceiling regulations," Dr. Reynolds pointed out, "but we are tremendously interested in preventing the spread of contagious diseases by means of the 'common cup' and we realize that when an extra charge is made for refreshments served in paper containers, this has a tendency to discourage their use. Thus, a penalty is placed on sanitation, and this practice ought to be stopped. . . .

"When, in the future, you are charged extra for paper cups, require the dispenser to inform you definitely whether the charge was levied after March. If it was and the dispenser insists that it be paid, it would be a good idea to obtain a receipt and mail this, together with the name of offender, to the OPA, in order that it may be used as evidence.

"So far as the State Board of Health is concerned, there will be no letup in its insistence that health and sanitary rules be rigidly enforced. The war, instead of forming an excuse for laxness, constitutes a real reason why there should be none. If there was ever a time to guard against the spread of disease—and the 'common drinking cup' is one of the surest disease carriers—it is now. We cannot afford to take any chances."

During the year, full-time public health protection has been extended to four counties—Scotland, Pasquotank, Montgomery and Iredell—with a combined population of 110,504, bringing the grand total of our people now actually enjoying this protection in 86 of the 100 counties to 3,340,975. This figure represents 93.5 per cent of our entire population—men, women and children, including all races living within our borders, white people, Negroes, Indians and such aliens who have taken up residence among us. Arrangements are underway for the admission of two other counties, which will add 24,710.

North Carolina's work in the field of venereal disease eradication has been so outstanding that, during the year 1942, the United States Public Health Service decided to give its financial aid to the establishment here of a "proving ground" for developing a program which, if it is successful, will be used as a working model for the entire United States. This new set-up, educational in its nature, already is functioning under the direction of a well-staffed organization.

North Carolina now has more than 300 State-supervised clinics for the treatment of venereal diseases, this number exceeding that of any other State in the Union. In these clinics, more than 6,000 are being treated every week for syphilis, of which there were 13,117 new cases admitted through November, not including 2,309 reported by private practitioners.

We have continued our efforts in behalf of our mothers and babies, to whom more than 300 clinics, located at strategic points throughout the State, now are available; there has been a continued expansion in the activities of the Oral Hygiene Division, the object of which is to protect our school children, now numbering nearly a million, against diseases resulting from poor mouth health. Work of the Crippled Children's Division has gone forward under adequate office management, in cooperation with a staff of eleven eminent orthopedic surgeons and twenty-two hospitals, with twenty clinics being conducted regularly at points throughout the State.

With State funds approximating $129,000, the State Laboratory of Hygiene during the past year has yielded to the people of North Carolina returns in services and materials conservatively valued at $3,000,000. While the war has increased the work of this division of the State Board of Health, it has proceeded without interruption, on an expanded basis.

In further pursuance of the nutrition program commenced in 1940, the work of extending this phase of public health educational work has been carried on with great effect during the past year. The ultimate objective is, of course, to set up a well-rounded organization in each of the State's 100 counties. In this task, the State Board of Health, shouldering its share of the responsibility, is working in close cooperation not only with State, Federal and local agencies, but with civic and other clubs, schools and colleges, and anticipates the eventual establishment of a division devoted exclusively to nutrition activities.

The Board already has been able to secure the services of two Rockefeller Foundation representatives. The time of one of these has been devoted to laboratory and field research into the prevalence of malnutrition among certain representative groups of our county populations while the other has promoted the organization of nutrition committees, with the object of teaching our people how to select, prepare and serve in their daily meals those foods that insure maximum health and morale.

News Notes From the Bowman Gray School of Medicine of Wake Forest College

The Surgeon General, United States Public Health Service, approved through the Office of Civilian Defense a grant of $1,610.56 under the Blood and Plasma Bank Program for aid in establishing a Blood and Plasma Bank at the North Carolina Baptist Hospital. All the students of the Bowman Gray School of Medicine voted to give up to two pints of blood for a reserve of 300 pints in the Blood Bank to be used in war emergencies.

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The Private Diagnostic Clinic has been expanded to include seven additional examining rooms.

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Dr. Tinsley R. Harrison, Professor of Medicine, and Dr. Wingate M. Johnson, Professor of Clinical Medicine, spoke at the Ninety-Fourth Annual Session of the Peedee Medical Association at Florence, South Carolina, on December 17. Dr. Harrison's subject was "Treatment of Congestive Heart Failure" and Dr. Johnson spoke on "Management of the Nervous Patient".

Ninth District Medical Society

The Ninth District Medical Society met in Statesville on December 18. Dr. George T. Harrell of the Bowman Gray School of Medicine and Dr. James P. Hendrix of Duke University School of Medicine gave lectures on War Gases.

Alamance-Caswell Medical Society

The regular meeting of the Alamance-Caswell Medical Society was held at the Alamance Hotel on December 8. The following officers were elected: President, Dr. J. B. Walker of Burlington; Vice President, Dr. J. L. Johnson of Graham; Secretary-Treasurer, Dr. P. Y. Greene of Graham; Delegate for the State Medical Society, Dr. A. J. Ellington of Burlington; Alternate Delegate for the State Medical Society, Dr. R. E. Brooks, Burlington; Board of Censors, Dr. P. Y. Greene, Chairman for one year; Dr. Donald E. Robinson of Burlington for two years; Dr. Alex W. Simmons of Burlington for three years.

Buncombe County Medical Society

The Buncombe County Medical Society held its annual business meeting for the election of officers and reports of committees on December 14. The banquet was not held this year.

The **Bulletin** of the Buncombe County Medical Society will suspend publication for the duration of the war. A mimeographed sheet containing program announcements and news items will be issued monthly in its stead.

Forsyth County Medical Society

The Forsyth County Medical Society held a dinner meeting for the election of officers in Winston-Salem on December 8. Dr. W. L. Kirby was elected president for 1943. Other officers elected were: First vice-president, Dr. E. S. Thompson; second vice-president, Dr. C. H. McCants; treasurer, Dr. Howard Starling; secretary, Dr. Carlton N. Adams; board of censors, Dr. J. K. Pepper for 1943-45; new delegates to state medical society, Dr. R. R. Garvey, Dr. C. H. McCants. Alternates are: Dr. J. A. Harrill, Dr. George Holmes, Dr. Rex Sink, Dr. O. E. Wright, Dr. V. C. Lassiter.

Dr. C. Nash Herndon was admitted to membership by transfer from Mecklenburg county. Dr. J. E. Kerr, a former member, was a visitor.

Resolutions to the Wake County Board of Health

At the November meeting of the Wake County Medical Society, held November 12, 1942, the greatly increased prevalence of typhus fever was discussed. It is generally recognized that while rat fleas are the vectors of the disease, cats and dogs, as well as rats and other flea harboring animals, serve as hosts, harboring infected fleas, and thereby aid in spreading the disease.

During part of this year 1942, more than 200 cases of typhus fever have been proven in North Carolina by agglutination tests made at the State Laboratory of Hygiene. Six cases have been recognized similarly in Raleigh and of these two have died. The typhus fever fatality rate is about 20 per cent in North Carolina. It is impossible to estimate the probable number of cases that for various reasons have not been diagnosed. In 1941, in North Carolina, 190 cases of typhoid fever were reported with a fatality rate of 10 per cent. Obviously, at present, typhus constitutes a problem of major public health importance, far surpassing typhoid fever in danger and importance in North Carolina as well as Wake County and Raleigh.

In the interest of the health of the public, the Wake County Medical Society urges the Wake County Board of Health to take the proper action to protect the citizens of Raleigh and Wake County. It is important that rats be killed, but this epidemic is being spread by fleas from cats and dogs. The cases in Raleigh have been closely grouped in an area located away from the recognized rat infested districts of the city; they have been closely grouped in an area from which cats and dogs heavily infested with fleas have been allowed to range at will off the premises of their owners.

We wish to remind you that this epidemic is a threat to the public health and that the danger cannot be averted so long as cats and dogs are allowed to range off the premises of their owners.

Committee for the Wake County Medical Society
Dr. Robert L. McGee
Dr. Charles P. Eldridge
Dr. Verne S. Caviness, Chairman

News Notes

Dr. Alexander H. Redding of Cedar Falls died of a heart attack at his home on November 16. Dr. Redding attended the College of Physicians and Surgeons at Baltimore and had been in active practice since 1883. He was an honorary member of the county and state Medical Societies.

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Dr. Harold Clark, President-Elect of the Buncombe County Medical Society, has reported for active duty in the Army Medical Corps.

Presentation of the Gorgas Medal

At a luncheon meeting of the Association of Military Surgeons of the United States, held in Washington on December 15, the Gorgas Medal, founded by John Wyeth and Brother, was awarded to Rear Admiral Edward R. Stitt, U.S.N., Brigadier-General Jefferson R. Kean, U. S. A., and Brigadier-General Frederick F. Russell, U. S. A., for distinguished service in preventive medicine for our armed forces.

AUXILIARY

The following Christmas message was sent to members of the Auxiliary from the State President, Mrs. Moore.

2415 Warwick Road,
Winston-Salem, N. C.
December 21, 1942

Dear Auxiliary Member:

I should like to say "Merry Christmas," and know that each one of you would have the merriest of holidays this year. But "merry" is probably not the word to use, for who can be merry in a war-torn world, with so many of our loved ones far away, and so much sorrow and suffering abroad in all lands? But we can be grateful for an opportunity to serve, and give, and love and pray. Doctors' wives throughout this land will work with high courage to fulfill this mission.

We shall as nearly as possible preserve for our families a normal, cheerful home-life. We shall accept new responsibilities at home and in the community to relieve the shortage of helpers in many lines of work. The time that we formerly spent in the leisure of social activities, we shall dedicate to the Red Cross, and find joy in the doing of it. We shall sew, and knit, and garden, and can, and sell bonds, and participate in every activity that will help to win the war. We shall deny ourselves of many accustomed luxuries so that those who need may be served.

We shall not forget how much we need each other, and with affection and sympathy we shall work together.

Particularly at Christmas-time, our thoughts shall go back to Bethlehem. It has been said that the Christmas story has more to say to a troubled world than to a prosperous one. From it we learn that love, tolerance, service and sacrifice are older, surer, mightier than force.

So let us face this Christmas with a resolve to give *ourselves* to the task of bringing Peace and Joy back to the world.

With best wishes,

NELLIE M. MOORE, (MRS. R. A.)
State President

ORGANIZATION WORK OF THE AUXILIARY

MRS. SIDNEY SMITH
State Chairman of Organization

The New Year unfolds before us a vista of great hope, great promise. We know that there is much rough going before our hopes can be realized, and without complaint we shoulder the added responsibilities which help us attain the goal. The war has disrupted all phases of life, and the Auxiliary, too, is experiencing new problems, particularly in the field of organization work.

The organization of the Auxiliary follows in form that of the State Medical Society, being divided into ten medical districts covering all counties in the state. Each district has its own councilor, who confers with county auxiliaries and acts as liaison agent between the county groups and the state organization. The councilor is the interpreter of the Auxiliary, and to her falls the duty of keeping members informed on projects and policies of the State Auxiliary, of defining its objectives, and of serving as a constant force for stimulating interest in the work of the organization among all doctors' wives in her district.

Of the ten councilors included on the State Auxiliary Board of Directors this year, three have found it necessary to resign in order to be with their husbands now in the armed services. It is too soon yet to predict whether or not our total membership will suffer from similar circumstances occurring throughout the state. It is not too soon, however, to issue an appeal to the wife of every doctor belonging to the State Medical Society to pay her dues this year, whether she is absent from her home county or not—even those who may be scattered to the far corners of the nation. For war or no war, the obligations of your State Auxiliary remain, and it is chiefly through membership dues that these obligations are met. It is the responsibility of each doctor's wife at least to maintain her membership even if she is unable to participate actively in the work of the Auxiliary.

Nor can these obligations be considered such, for in reality they are blessings which the Auxiliary provides for members of its own professional family. These include the maintenance of beds in two State sanator-

iums for the benefit of doctors or members of doctors' families suffering with tuberculosis, and the support of the Student Loan Fund which is available to sons and daughters of doctors in need of financial aid in completing college educations.

It is equally necessary that the Auxiliary maintain its present membership and strive to increase and grow stronger during the present crisis. It has valuable educational and legislative information to impart and must reach more women than ever before if it is to be a strong ally of the medical profession in the aftermath of war.

In spite of handicaps—the loss of good officers, the shifting of jobs in mid-year, the inability of State officers and councilors to travel among the county auxiliaries, the press of time for all women—the Auxiliary is continuing to grow! Since the last annual state meeting, at which seventeen counties were reported organized, two new counties have been added, making a total of nineteen organized county auxiliaries now in North Carolina. We proudly welcome the two new counties—Wilkes-Alleghany and Randolph.

To step-up the membership drive members of county auxiliaries have been requested to see the wives of all doctors belonging to county societies, urging them to pay dues and remitting all dues as early as possible to the State treasurer. The response has been superb.

The councilors will soon issue cards to wives of doctors in counties having no auxiliaries, appealing to them to join as members-at-large. In this manner the State Auxiliary strives to give to wives of all members of the State Medical Society the opportunity for membership. Any doctor's wife who is not reached and who wishes to contribute to the work of the Auxiliary may perform a great service by sending one dollar, for annual dues, along with her name and address, to the State Auxiliary Treasurer, Mrs. E. C. Judd, 2108 Woodland Avenue, Raleigh, N. C.

A list of organized county auxiliaries and their presidents follows:

Caldwell—Mrs. L. M. Fetner, Lenoir
Craven—Mrs. C. S. Barker, New Bern
Duplin—Mrs. G. V. Gooding, Kenansville
Forsyth—
Mrs. Beverly N. Jones, Winston-Salem
Gaston—Mrs. W. M. Roberts, Gastonia
Guilford—Mrs. W. T. Tice, High Point
Halifax—Mrs. F. W. M. White, Halifax
Hoke—Mrs. A. A. Vanore, Sanatorium
Mecklenburg—
Mrs. Raymond Thompson, Charlotte
New Hanover-Brunswick-Pender—
Mrs. Graham Barefoot, Wilmington
Person—Mrs. Hugh Beam, Roxboro
Pitt—Mrs. W. I. Wooten, Greenville
Randolph—Mrs. R. P. Sykes, Asheboro
Robeson—Mrs. H. T. Pope, Lumberton
Rockingham—Mrs. C. V. Tyner, Leaksville
Sampson—Mrs. J. S. Brewer, Roseboro
Wake—Mrs. Charles E. Flowers, Zebulon
Wayne—Mrs. S. B. McPheeters, Goldsboro
Wilkes-Alleghany—
Mrs. W. K. Newton, North Wilkesboro

The councilors in the ten districts of the State Auxiliary are:

First District—
Mrs. Z. B. Owens, Elizabeth City
Second District—
Mrs. Oscar A. Kafer, New Bern
Third District—
Mrs. D. M. Royal, Salemburg
Fourth District—
Mrs. C. F. Strosnider, Goldsboro
Fifth District—
Mrs. A. L. O'Briant, Raeford
Sixth District—Mrs. P. G. Fox, Raleigh
Seventh District—Mrs. G. Aubrey Hawes, Charlotte (resigned)
Eighth District—Mrs. Edward T. Harrison, High Point (resigned)
Ninth District—
Mrs. Alfred A. Kent, Jr., Granite Falls
Tenth District—Mrs. D. I. Campbell King, Hendersonville (resigned)

Tuberculosis contracted or aggravated because of working conditions is to be considered compensable, but in workman's compensation laws greater consideration should be given to precipitating causes than to predisposing factors. Large numbers of persons with inactive or mildly active tuberculosis are able to work in our factories without becoming ill because working conditions are favorable. But occupations such as that of policeman or soldier, involving bad hours, undue exposure to the elements and other unhygienic conditions, may definitely initiate tuberculous activity.— A. Licurzi, Rev. Asoc. med. argent., Nov. 15-30, 1941.

The World Over

Tuberculosis already appears on the increase in the warring nations in the second world conflict. No single cause is apparent. All the factors concerned in the other world war again operate. Malnutrition is known to be serious in certain countries. Esmond R. Long, M.D., Amer. Rev. of Tuber., June, 1942.

BOOK REVIEWS

Diseases of the Liver, Gallbladder and Bile Ducts. By S. S. Lichtman, M. D., F. A. C. P., Adjunct Physician, Mt. Sinai Hospital, Assistant in Post-Graduate Medical School Instruction, Columbia University, New York. 906 pages, illustrated with 122 engravings and a colored plate. Price, $11.00. Philadelphia: Lea and Febiger, 1942.

There has long been a need for a comprehensive monograph on the liver and its diseases. Except for the classical treatise by Rolleston which appeared some years ago, there has been no book dealing exclusively with this important organ, which is involved in so many disease processes. Dr. Lichtman presents in this volume a systematic survey of existing knowledge of the structure, function, pathology, diagnosis and treatment of diseases involving the liver and biliary tract. The book is well written and arranged in a clear and logical sequence. The typography is excellent. The omission of any extended discussion of hypoglycemia and its attendant symptoms as a consequence of hepatic dysfunction, of secondary melanosarcoma of the liver, or of the occurrence of eosinophilia in primary carcinoma of the liver seems surprising in so comprehensive a text. However, these are minor criticisms and the book will offer much valuable information to the internist, practitioner and student of medicine.

Ophthalmology and Otolaryngology. Volume II of Military Surgical Manuals. Prepared and edited by the Subcommittee of Ophthalmology and Otolaryngology of the Committee on Surgery of the Division of Medical Sciences of the National Research Council. Price, $4.00. 331 pages, with 124 illustrations. Philadelphia and London: W. B. Saunders Company, 1942.

Outstanding authorities were selected to write this text. Each has ably simplified, condensed and arranged the subject matter. Many aspects of this manual will be of value to every medical officer. The volume should be frequently consulted by those assigned to ophthalmology and otolaryngology. A large percentage of the physicians entering the armed services from civilian practice will lack the experience and judgment necessary to diagnose and treat successfully many of the conditions discussed.

The chapters on eye consider functional testing, examination of the eye, acute visual disturbances, acute inflammations and injuries, local anesthesia about the orbit, and medical and surgical treatment and procedures.

Subjects considered under ear, nose and throat include primary treatment of gunshot wounds of the face; the ear, nose and throat in general; fractures and injuries of the temporal bone, labyrinth, cribriform plate, throat, larynx, trachea, and esophagus; group testing of hearing; malingering; petrositis; the ear in military aviation; reeducation of the soldier with speech and hearing defects; infections of the throat and chemotherapy.

Military Medical Manuals — Manual of Dermatology: Issued under the Auspices of the Committee on Medicine of the Division of Medical Sciences of the National Research Council by Donald M. Pillsbury, M.D.; Marion B. Sulzberger, M.D.; Clarence S. Livingood, M.D. 421 pages with 109 illustrations. Price, $2.00. Philadelphia and London: W. B. Saunders Company, 1942.

This "Military Medical Manual" gives in streamlined form the essentials of dermatology, particularly as it concerns adult males. The numerous cuts, while not colored, give excellent conceptions of the common skin lesions that occur in this group. The verbal description is good, and the treatment is given in some detail. Even though planned for military use chiefly, it can be recommended to civilian physicians who wish a handy manual for constant reference.

Surgical Physiology. By Joseph Nash, M.D., Professor of Clinical Surgery, New York University College of Medicine; Associate Visiting Surgeon, Bellevue Hospital, New York City; First Lieutenant, Medical Corps, U. S. Army; Assistant Chief of the Surgical Service, Lovell General Hospital, Fort Devens, Massachusetts. 496 pages. Price, $6.00. Springfield, Illinois: Charles C. Thomas, 1942.

There has long been a need for a book on surgical physiology which would compare to Best's and Taylor's **Physiological Basis of Medical Practice.** That need has been filled adequately in the present volume. Certainly every thoughtful surgeon feels the need for a more physiological training and has wished for a quick reference book on physiological problems related to surgery. This book is not—nor is it meant to be—either a physiological or a surgical textbook. There is, however, a broad field between the care of the surgical patient and academic physiology which this book covers. It can be recommended to every physician interested in surgery.

Constitution and Disease. Applied Constitutional Pathology. By Julius Bauer, M. D., Professor of Clinical Medicine, College of Medical Evangelists, Los Angeles, California. 206 pages. Price, $3.50. New York: Grune and Stratton, 1942.

The author of the present volume is a former professor of medicine at the University of Vienna and the author of a well known German text and of many papers on the relation of constitution and heredity to human disease. That heredity factors and constitutional make-up predispose individuals to certain diseases is now generally recognized. Unfortunately, the difficulty of dealing with this relationship in an objective and scientific manner has led to many fantastic theories and much loose-thinking. Dr. Bauer has succeeded in avoiding this defect by adhering closely to the accepted facts and omitting the more speculative aspects of the subject. Considering the difficulty of the subject and the lack of fundamental facts available at present, the author has done an excellent job. The book will prove of value in aiding the physician to appreciate the role which constitutional factors play in disease. An index would have added to the value of the book, but is unfortunately lacking.

Blood Substitutes and Blood Transfusions. Edited by Stuart Mudd, M. A., M. D., Professor of Bacteriology, University of Pennsylvania School of Medicine; and William Thalhimer, M.D., Director, Human Serum Division, Public Health Research Institute of the City of New York, Inc. 407 pages. Price, $5.00. Springfield, Illinois: Charles C. Thomas, 1942.

In this monograph the experiences of seventy investigators in this very important aspect of medicine have been recorded. The material was presented as a symposium before the American Human Serum Association at its annual meeting in 1941. The original papers were revised for this publication, so that new developments would be included, and the discussions following the papers were also included for completeness.

By way of background, the first four chapters are devoted to a discussion of the etiology and mechanisms of secondary shock. This is followed by a detailed discussion of methods of preserving plasma and serum by freezing and by desiccation. A comparison of these methods is given with regard to bacteriological control, flocculation, complement, prothrombin content, and the electrophoretic patterns. Among other topics discussed are the production and use of crystalline human hemoglobin, hemoglobin-saline solutions as transfusion media, the use of human albumin, casein digests parenterally administered, and the antigenicity of the Rh blood factor in transfusion and pregnancy. The monograph concludes with a discussion of therapeutic experiences in the use of serum and plasma. The book's usefulness is increased by the extensive bibliography covering each topic discussed.

The subject of blood substitutes and transfusions is one of ever increasing importance in medicine, and the information available is widely scattered through medical literature. Therefore, this very timely collection of experience and thought makes available to the alert and busy physician a wealth of material otherwise difficult to obtain.

Viruses and Virus Diseases. By Thomas M. Rivers, M. D., Sc. D., Director of The Rockefeller Institute for Medical Research, New York City. 133 pages. Price, $2.50. Stanford University, California: Stanford University Press, 1939.

One of the highest compliments that can be paid any doctor is to be selected to deliver the Lane Medical Lectures, which were established in 1896 by Dr. Levi Cooper Lane, founder of Cooper Medical College, which in 1908 became the School of Medicine of Leland Stanford University. Of the twenty-six lecturers who preceded Dr. Rivers, fifteen were from England, Scotland, Germany, Austria, Italy or Egypt. It is no surprise to those who know of Dr. Rivers' high standing in research that he was selected to summarize the present knowledge of viruses and virus diseases—knowledge to which he had contributed perhaps more than any other man.

The book contains five chapters or lectures: (1) Lymphocytic Choriomeningitis; (2) Pathology of Virus Diseases; (3) Immunological and Serological Phenomena of Virus Diseases; (4) Nature of Viruses; and (5) Treatment and Prevention of Virus Diseases.

It is hardly necessary to say that this book is eminently worth while to any one who wants to acquaint himself with the modern conceptions of a most important field in medicine. It is well written, well illustrated, and authoritative.

Clinical Atlas of Blood Diseases. By A. Piney, M. D., M.R.C.P. London, Physician, St. Mary's Hospital for Women and Children; and Stanley Wyard, M. D., F.R.C.P. London, Physician, The Royal Cancer Hospital. Fifth edition. 134 pages with 43 illustrations in color. Price, $5.00. Philadelphia: The Blakiston Co., 1942.

Advances in hematology have been so rapid that the average practitioner often looks upon the subject as being too complex and difficult to warrant his attention. This attitude is not justifiable, for with little trouble an examination of the blood smear will often reveal the diagnosis of many obscure disorders. For the guidance of the student and practitioner of medicine this little manual will prove invaluable. It outlines in succinct form and reproduces in colored plates the blood picture encountered in the common blood dyscrasias. It well deserves the popularity it has enjoyed among medical students since its first appearance in 1930, and will prove a valuable acquisition for the general practitioner.

Medical Parasitology. By James T. Culbertson, Assistant Professor of Bacteriology, College of Physicians and Surgeons, Columbia University. 285 pages, illustrated with 21 plates, 16 figures and 7 tables. Price, $4.25. New York: Columbia University Press, 1942.

This small volume, unlike many of the texts on parasitology, is written from the viewpoint of the medical student or practicing physician rather than from the viewpoint of a biologist. The material has been most conveniently arranged. There is an introductory discussion of parasitic diseases as opposed to bacterial diseases in regard to epidemiology, immunity, and therapy. The diseases are then discussed in the second part according to the type of parasite. The illustrations are all photographs, excellently reproduced. A discussion of therapy and all-important prophylaxis is included under each disease. There is a short appendix on technical methods. This volume fills more closely than any other this reviewer has seen the need for a short, clear, easily readable book for reference and for review on a subject of increasing importance.

Four Treatises of Theophrastus von Hohenheim, Called Paracelsus. Translated from the original German, with introductory essays by C. Lillian Temkin, George Rosen, Gregory Zilboorg and Henry E. Sigerist, and edited, with a preface, by Henry E. Sigerist. Price, $3.00. 256 pages. Baltimore: The Johns Hopkins Press, 1941.

The Institute of the History of Medicine of the Johns Hopkins University has made a notable contribution to historical medicine by reprinting with illuminating notes various classical texts and documents. The present book is the first volume of a second series of these contributions. It deals with Paracelsus, the gifted pioneer of modern pharmacy and medicine, in whom the intellectual atmosphere of alchemy and astrology was combined with that of the renaissance in science and discovery which took place at the beginning of the sixteenth century. The present volume can be recommended to all who are humanistically inclined as an excellent study of Paracelsus, his times and works.

Sex Hormones. Edited by F. C. Koch, Professor Emeritus of Biochemistry, the University of Chicago; and Philip E. Smith, Professor of Anatomy, Columbia University; with a foreword by Frank R. Lillie. 146 pages. Price, $2.50. Lancaster, Pa.: The Jaques Cattell Press, 1942.

This monograph is the ninth volume of a series of Biological Symposia devoted to current interests in the field of biology. It contains the addresses on "The Comparative Biology and Metabolism of the Testicular and Ovarian Hormones", delivered at the University of Chicago at its Fiftieth Anniversary celebration, and the Symposium on "Hormonal Factors in Sex Inversion", presented at the annual meeting of the American Association of Anatomists. The eight chapters in the present volume are: "The Comparative Biology of Testicular and Ovarian Hormones", by C. R. Moore; "The Comparative Metabolic Influences of the Testicular and Ovarian Hormones", by A. T. Kenyon; "The Metabolism of Estrogens", by E. A. Doisy; "The Excretion and Metabolism of Male Sex Hormones in Health and Disease", by F. C. Koch; "Sex Inversion in the Plumage of Birds", by C. H. Danforth; "Sex Inversion in the Amphibia", by R. R. Humphrey; "Hormonal Factors in Sex Inversion", by R. R. Greene, and "Hormones and Experimental Modification of Sex in the Opposum", by R. K. Burns. As is evident from this list, many of the subjects of active experimental interest in the field of the biology of sex are reviewed. The book should prove of interest and of value not only to biologists but to physicians as well, for only by comprehending the basic principles of the biology of sex can one hope to understand this complex function as it affects the human organism.

Food Charts: Foods As Sources of the Dietary Essentials prepared by a joint committee of the Council on Foods and Nutrition of the American Medical Association and of the Foods and Nutrition Board of the National Research Council. Paper. Price, 10 cents.* 20 pages. Chicago: American Medical Association, 1942.

*Quantity prices on request.

Current interest in nutrition is at a high level and the subject merits all the attention which it is receiving. Information about the composition of foods now is on a quantitative basis. A forceful presentation of some facts about foods as sources of the dietary essentials is provided by the present illustrated essay, which has been prepared by a joint committee of the Council on Foods and Nutrition of the American Medical Association and of the Food and Nutrition Board of the National Research Council. There are eight charts showing the contribution that individual foods may make with respect to the needs for protein, calcium, iron, vitamin A, thiamine, riboflavin, nicotinic acid, and ascorbic acid. A feature of these graphic presentations is that the values are presented in terms of the proportion of the daily requirements which are supplied by typical servings of each food. The requirements selected are the Recommended Daily Allowances of the Food and Nutrition Board of the National Research Council. In addition the booklet reproduces the table of Recommended Dietary Allowances and also provides the values of Minimum Dietary Requirements developed by the Food and Drug Administration for purposes of labeling special foods. This little essay thus provides considerable factual information about foods as sources of the dietary essentials.

When Doctors Are Rationed. By Dwight Anderson, Director of Public Relations, Medical Society of the State of New York, and Margaret Baylous, Therapist, Charleston General Hospital, Charleston, West Virginia. Price, $2.00. 255 pages. New York: Coward-McCann, Inc., 1942.

The growing concern over adequate medical care for the civilian population, recently emphasized—perhaps unduly—by the report of Senator Pepper's subcommittee on man power, makes the time ripe for such a sane, clear discussion of the problem by experts on medical public relations. Without shutting their eyes to the seriousness of the situation, Mr. Anderson and Miss Baylous tell what is being done to assure adequate medical care for the civilian population, as well as for the armed forces. Much good advice is given the layman as to how to conserve the energy of his medical advisers, without suffering for lack of medical attention. The authors tell of the achievements of the public health service; of the steps being taken to insure adequate medical service for communities made into boom towns by defense projects; of the increased activity of medical schools; and of the splendid work being done by women doctors. They advise the layman how to be a good patient; what to expect of his doctors; and, finally, how to choose his doctor.

Of special interest to North Carolinians is the statement—made more prominent by inclusion in Dr. Van Etten's foreword—that North Carolina is the only state in the union that enforces compulsory vaccination against diphtheria.

The only criticism of the book is that it was left with uncut edges. In these days of high pressure living, it is quite irritating to have to pause every few minutes to sever an adhesion between the leaves of a book as interesting as this.

Selected Questions and Answers. From the Queries and Minor Notes Department of the Journal of the American Medical Association. 478 pages. Price, $2.00. Chicago: American Medical Association Press, 1939.

This is a collection of selected questions and answers which appeared in the Department of Queries and Minor Notes of the **Journal of the American Medical Association** from 1937 through 1939. They are arranged by chapters according to subject matter and deal with numerous aspects of medicine which present themselves in every-day practice. The value of a book of this kind is that it includes discussions of many problems which are not dealt with in the usual textbook. The answers are, in general, concisely given and present the best available information on the subject, although an expert in a given field may find views which are open to question. In spite of this criticism the book should prove both interesting and informative to the practitioner and medical student.

Synopsis of Blood Diseases. By A Piney, M. D., M.R.C.P. London, Physician, St. Mary's Hospital for Women and Children. 120 pages. Price, $2.75. Philadelphia: The Blakiston Co., 1942.

This brief outline of hematology summarizes the more practical aspects of the subject and was written primarily for senior medical students and practitioners. All the commonly encountered disorders of the blood and blood forming organs are considered, with brief discussions of their symptoms, changes observed in the blood, pathology and treatment. Four colored plates, in which impressionistic drawings of blood and marrow cells are reproduced, are included. The present volume should prove a popular companion to the author's well known atlas reviewed elsewhere in this journal.

Contraception and Fertility in the Southern Appalachians. By Gilbert Wheeler Beebe, Ph.D., Research Associate, Milbank Memorial Fund. Price, $2.50. 286 pages, with 12 illustrations. Published for the National Committee on Maternal Health, Inc. by the Williams & Wilkins Co., Baltimore, 1942.

This is one of a series of volumes dealing with medical aspects of human fertility issued by the National Committee on Maternal Health. It attempts to inquire into the possibility of encouraging birth control in rural areas of low economic level and high fertility, and is based on a study of 1300 families in Logan County, West Virginia, with the addition of comparable findings in other areas of the Southern Appalachians. The results of the study show the need for a more diversified contraceptive service than is at present available. Those interested in this problem will find Dr. Beebe's monograph of interest from a practical medical as well as a sociological standpoint.

The Value of Health to a City. Two Lectures Delivered in 1873 by Max von Pettenkofer. Translated from the German, with an introduction, by Henry E. Sigerist. Price, $1.00. 52 pages. Baltimore: The Johns Hopkins Press, 1941.

Max von Pettenkofer, who was born in 1818 and died in the first year of the current century, was one of the founders of the modern science of nutrition and public health, and the first occupant of a chair in a department of hygiene. The lectures reprinted in the present book were delivered to arouse in the inhabitants of Munich an appreciation of the economic loss entailed in poor living conditions, and a desire to remedy them. Although delivered almost a half century ago, these lectures, like all truly classical works, are up-to-date in their appeal and convey the spirit of Pettenkofer's broad interest in public health and humanitarianism.

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Vitamin Films in Color

During the past year the three 16-mm. silent motion pictures in color, describing certain vitamin deficiency diseases, which were made available by Eli Lilly and Company, Indianapolis, for showing before medical groups under sponsorship of a physician, have been in continuous demand. One film deals with deficiency of thiamine chloride (beriberi), another with nicotinic acid deficiency (pellagra), and the third with ariboflavinosis. To meet increasingly frequent demands for the films, additional new prints have been placed in circulation and are now ready for loan. The major part of all films concerns the clinical picture presented by the patient with reference to treatment by diet and specific medication. They do not contain advertising of any description, nor is the name of Eli Lilly and Company mentioned.

The films were made at the Nutrition Clinic of the University of Cincinnati at the Hillman Hospital, Birmingham, Alabama, where studies were initiated in 1935, under the joint auspices of the Department of Internal Medicine of the University of Cincinnati and the University Hospitals of Cleveland. Subsequently, these investigations became a cooperative project between the Departments of Medicine of the University of Cincinnati and the University of Alabama, and the Department of Preventive Medicine and Public Health of the University of Texas.

Army-Navy "E" Presented to Winthrop Chemical Company

Twin ceremonies on Thursday, December 17—one in Rensselaer, N. Y., and the other at the Hotel New Yorker in New York City—marked presentation of the Army-Navy "E" to Winthrop Chemical Company.

Principal speakers at both ceremonies were Brig. Gen. Charles Clark Hillman, chief of professional service of the Surgeon General's office of the War Department; Rear Admiral Charles S. Stephenson, head of the division of preventive medicine, Bureau of Medicine and Surgery, Navy Department; and Dr. Morris Fishbein, editor of the Journal of the American Medical Association.

Ceremonies began at 10:45 A. M. at the company's plant in Rensselaer, and more than 1,000 employees were expected to attend. The New York presentation was scheduled for 7 P. M., with a dinner for employees, at which Dr. Fishbein and Lowell Thomas spoke, beginning an hour later.

Winthrop is manufacturing many vital drugs for the Armed Forces, according to Dr. Theodore G. Klumpp, president. Among these is Atabrine, a synthetic substitute for quinine in the treatment of malaria. Winthrop's research, initiated at the outbreak of war in 1939, made possible the production of this anti-malarial entirely from materials of domestic origin, Dr. Klumpp said, and Atabrine is today being manufactured here in the United States at a rate which is 16,000 per cent above pre-war U. S. requirements.

The Army-Navy E flag was accepted for Winthrop's plant at Rensselaer by Dr. A. E. Sherndal, plant superintendent, who was responsible for the Atabrine research which freed the United States from dependence on foreign sources for supplies required in the production of Atabrine. In New York, Dr. Klumpp accepted the flag on behalf of the management.

Do not forget that of all the countless remedies, rest, alone, has stood the test of time. Gerald B. Webb, M.D.

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